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THE
MEDICAL & SURGICAL
REGISTER:

CONSISTING CHIEFLY OF

CASES

IN THE

NEW-YORK HOSPITAL.

BY

JOHN WATTS, JUN. M.D. VALENTINE MOTT, M.D.

AND

ALEXANDER H. STEVENS, M.D.

PART II.—VOL. I.



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ISRAEL ADAMS.

Dec: 11. 1819.



ISRAEL ADAMS.

March 1. 1820.

A CASE
OF AN
EXTRAORDINARY TUMOUR,
SUCCESSFULLY EXTIRPATED

BY ALEX. H. STEVENS, M.D.

ISRAEL ADAMS, aged 43 years, born in Massachusetts, a tall, thin, man, a farmer in the early part of his life, entered the New-York Hospital, by the advice of Dr. Post and myself, on the 8th of December, in order to undergo an operation for the removal of a tumour on the right side of the neck.

Its *general shape* was not unlike that of the uterus in the early months of pregnancy—its base answering to the fundus. Its *surface* was hard and lobulated, and covered with a thin skin of nearly the natural colour: several large veins were seen ramifying upon it, and an extensive cicatrix existed on its upper part.

The *base* of the tumour extended from the mastoid process of the temporal bone behind the angle and under the base of the lower jaw, one inch beyond its symphysis; and passing upwards and inwards, encroached upon the cavity of the

mouth, opposite to the molar teeth. In its course from the chin downwards it passed by the side of the thyroid cartilage, and two inches below it; thence backwards to the inner edge of the sternocleido-mastoid muscle, and upwards along the anterior edge of that muscle to the mastoid process.

The *body* of the tumour extended laterally two inches beyond the trachea—downwards, two inches and an half below the clavicle, and backwards one inch and an half behind the posterior edge of the mastoid muscle. Its circumference at the base was fifteen and an half inches—its length eight and an half inches. The patient usually supported it by an handkerchief passed over his head. It was moveable and loosely attached, except within the angle of the lower jaw, when it appeared to be connected more intimately with the adjacent parts—perhaps from repeated pressure and irritation in the act of mastication. When the tumour was raised by the hand, the thyroid cartilage was raised with it—when it was pulled down, that cartilage was prevented from being elevated, and swallowing was performed with difficulty; otherwise it did not impede deglutition, respiration or articulation. It gave no pain except from its weight, but it was unsightly, and burdensome, and prevented him from working.

Adams states that about twenty-seven years ago he first observed a small moveable tumour, which

he supposed to be a gland swollen from a cold, under the right side of the lower jaw a little before its angle. This increased in size and became more and more troublesome for a period of seventeen years, when he submitted to an attempt at its removal; but the Surgeon alarmed by the hemorrhage which followed the first incision, tried to twist it out, and finding that impracticable, relinquished the operation. After his recovery, the tumour continued to increase as before, and has latterly grown very fast.

The day after his admission, a consultation was called, and it was agreed that an operation should be performed.

December 11th.—The patient being placed upon a chair with his right side toward the light, and his head drawn toward the left shoulder, I commenced the operation by dividing at one incision, the integuments from a point an inch below the angle of the lower jaw, to another, one inch below its symphysis, and by continued dissection in the course of this first incision, I divided and secured in succession the principal vessels supplying the tumour. Two or three of them, probably the facial, the sub-lingual and the superior thyroideal bled so profusely, that I found it necessary to cover their open mouths with a finger until they could be tyed. The next step of the operation was to divide the integuments from the extremities of the first incision, by two incisions

downwards, which met each other at a point one inch and a half above the sternal end of the clavicle. Partly by cautious dissection, and where it was practicable by tearing the connexions of the tumour with my fingers or with the handle of the scalpel, I accomplished its removal, without much further loss of blood, or any untoward circumstance. The external jugular vein ran along the posterior edge of the tumour, but the extreme steadiness of the patient, (who regarded me with an expression of confidence and apprehension, easier felt than described) rendered the dissection of it quite easy. The separation of the tumour from the muscles between the os hyoides and the chin, and more especially from the parts connected with it behind the angle of the jaw, was more difficult; this was facilitated by suffering the weight of the tumour to put those parts upon the stretch during the dissection.

The triangular wound left by the operation exhibited the pulsations of the external carotid, the 9th pair of nerves, the digastric, the stylo-hyoid, and the mylo-hyoid muscles; and in general all the external layer of muscles which elevate or depress the os-hyoides and the cartilages of the larynx. On either side were angular flaps, and when these were approximated by a suture, the incisions resembled a T, the vertical portion of which lay upon the inner side of the sterno cliedo-mastoid muscle. The lips of the wound were kept in ap-

position by a single ligature passed through the angles of the flaps and the centre of the first incision, and by strips of adhesive plaister.

The external surface of the tumour deprived of the thin cutis which had covered it, was lobulated, smooth and of a bright yellow colour. A scalpel pushed into it, imparted to the fingers the grating feel of brisket, or, intervertebral substance. It contained several cavities from which a colourless fluid was discharged. Its weight, after diminution from this cause, was three pounds and an half.

December 13th.—The patient has been comfortable—is ordered a portion of the sulphate of magnesia.

December 16th.—The lint is loosened by supuration and the wound is dressed. It exhibits a narrow cavity high up between the angle of the jaw and the pterygoid process of the os sphenoides.

March 1st.—The wound is healed and the patient entirely well.

I am indebted to Mr. John Neilson for the drawings of this case, and to Mr. James C. Townsend the House Surgeon for his unremitting care of the patient.

I cannot close this paper without adverting to the advantage of cutting and securing the trunks of vessels, before their branches are divided—an advantage more than sufficient to counter-balance the inconvenience of the blood from the upper incision, obscuring the dissection of the parts

below. A patient exhausted by repeated division of arterial branches may sink under subsequent hemorrhage; but if the trunks of the vessels are secured the branches give no further trouble.

In the 10th number of the *Journal Complémentaire du Dictionnaire des Sciences Médicales*, is an account of an operation communicated to the Academy of Sciences, by Baron Larrey, for the extirpation of a tumour, situated very nearly like that of Adams's.

The patient was placed on a bed. The operator by an incision, parallel to the edge of lower jaw, first divided the integuments which covered the whole extent of the tumour. Three other incisions intersected this at right angles, the first passed along the anterior edge of the sterno-cleido-mastoid muscle to the clavicle, the second passed over the centre of the tumour, and the third and smallest over the middle of the larynx.

The account concludes with this remarkable sentence. "The enormous wound having been washed, the operator approximated its numerous edges and angles, which he kept in contact by means of twenty stitches and some strips of adhesive plaister."

The surgeons of this country are not, I believe, much in the habit of washing wounds made by surgical operations, and they agree with Petit, in avoiding the inserting of numerous sutures.

A CASE
OF
EXTENSIVE INFILTRATION
OF
URINE,
SUCCESSFULLY TREATED,

WITH REMARKS, BY ALEX. H. STEVENS, M.D.

I was suddenly called on the morning of the 1st of April, 1819, to see a stout, middle aged porter, who was said to be dying from infiltration of urine. I found the lower part of his abdomen, his penis, scrotum, and perinæum greatly swollen and discoloured. The root of the penis and the contiguous part of the scrotum were livid.

He had contracted gonorrhœa eighteen months before, and had passed blood from the urethra. No injections had been used, but a stricture succeeded, which gradually grew worse, and was particularly troublesome when he exposed himself to cold. From such exposure he had suffered unusual difficulty in passing his water; about five days before I saw him, and in straining to empty

his bladder, he felt that the bladder was partially emptied, for although no water was discharged from the meatus urinarius, his scrotum and perinæum began to swell. He sent for assistance and repeated attempts to introduce a catheter were made without success. After 48 hours, during which he occasionally passed a small quantity of urine, the obstruction was complete, except that a few drops followed the repeated unsuccessful attempts to introduce a catheter, previous to my seeing him.

I found I could pass a bougie almost to the bladder without difficulty, but when the point of the instrument was near the prostate gland, it took a devious course to the right side, from which I could not divert it; I therefore scarified the scrotum and had him carried to the operating Theatre of the Hospital, to which I accompanied him. On his arrival, about half an hour afterwards, the mortification of the penis and scrotum had greatly increased, and a gangrenous that of the size of half a crown had appeared over the *linea alba*, about midway between the pubis and the umbilicus. The man's countenance was cadaverous, and a highly urinous odour was exhaled from his body. Indeed he appeared so far gone, that some of the medical gentlemen who happened to be present, considered the case entirely desperate, and discouraged me from attempting to relieve

him. Yet the indication was so clear, that the prospect of failure did not appear to justify me in not operating.

The patient being placed upon his back, I made an incision in perinæo as in lithotomy. The division of the integuments exposed to view a dark greenish coloured mass of dead parts; not a drop of blood flowed. I cut onward, endeavouring to guide the edge of the knife by the symphysis pubis, and divide the membranous part of the urethra and thence to introduce a small catheter or probe into the bladder; the swelling of the parts was such as to prevent my distinguishing accurately, either the lower edge of the symphysis pubis or the ramus of the left ischium, and in the mortified mass before me all parts were confounded.

There were two other routes by which I might reach to the bladder, 1. above the pubis, and 2. through the rectum. The soft parts were so much raised, anterior to, or as the patient lay, above the pubis, that the upper edge of the symphysis could not be marked with any tolerable degree of accuracy. On the other hand the prostate gland, although enlarged, permitted me to feel the fundus of the bladder above it. Here I opened it by means of a tonsil lancet, (the most convenient instrument at hand) and drew off a quantity of dark coloured fetid urine, that left a deep black stain upon the silver sheath of the instrument.

The lancet was detached from the sheath, which was left behind, and the patient was carried to bed. A cordial draught was administered, and cloths wet with yest were applied.

During the night, the sheath of the tonsil lancet slipped out, and before it was necessary to replace it, the urine found an outlet by the perinæum. The suppuration which followed was greater than any I have ever witnessed. The whole perinæum and the abdomen below the umbilicus, a large portion of the scrotum and the root of the penis were involved in it. Sloughs of cellular membrane and of the sheaths of the abdominal muscles came away, in pieces as large as the hand. A large extent of the rectus abdominis muscle was laid bare. Six openings were made at different times, in various parts of the belly, for the evacuation of matter. Until the sloughs separated, cloths wet with yest were applied; afterwards the cloths were wetted with a decoction of linseed, except where the pressure of a poultice seemed likely to prevent the lodgment of matter. The patient took bark, porter and a nutritious diet, first in conjunction with mild diaphoretics and afterwards without them; and at length, after eight weeks confinement he was able to walk about, and was soon after dismissed, cured: being then able to pass all his urine through the natural channel.

This case is introduced not merely as an extraordinary instance of recovery from profuse suppuration, but principally to illustrate.

1. The mischievous effects of violence in the use of the catheter, as tending to produce a rupture in the urethra.

The looseness with which writers describe the degree of force that should be employed, in the various operations of surgery, is much to be lamented—a hernia is to be reduced by *moderate* pressure:—a dislocated arm is to be replaced by *moderate* extension—*moderate* force is to be used in pulling upon the cord for the extraction of the placenta; this loose way of using terms, which is universal, does not convey any definite idea. It were much better if surgeons should say to their pupils, you may employ for the reduction of a hernia, a force equal to the weight of ten pounds; you may employ for the extension in the reduction of a dislocated arm, a force equal to the weight of fifty pounds; you may pull upon the cord with a force equal to the weight of three pounds; you may push in the catheter with a force equal to the weight of one pound. Surely this would enable a well instructed young man, to commence practice with a little less chance of learning from experience as it is termed, that is, being taught exclusively by his own blunders. In a man recently dead, I found that a force of

about six pounds pushed a blunt sound through the prostate, and into the bladder, about half an inch below the commencement of the urethra.

2. The danger of delay in affording a free outlet to the urine, after such rupture has occurred.

And lastly, the safety of making an opening into the bladder, through the rectum. I am not unaware that the authority of Dessault would have sanctioned another procedure, nor that my distinguished preceptor, Dr. Physick, has recommended the use of a catheter, with a stylet intended to be pushed through the stricture into the bladder. In other hands than his own, I should fear it would make a false passage, rather than restore the true one. At any rate, the operation which relieved Patrick may be performed by many, who could not open the bladder in any other way, without more instruments and more anatomical knowledge than most practitioners possess.

REMARKS
ON THE TREATMENT
OF
SECONDARY SYPHILIS,

BY ALEX. H. STEVENS, M.D.

THE principal object of the present paper is to make known the results of the writer's experience in the New-York Hospital, in the use of a compound syrup of sarsaparilla and guiacum, for the cure of what are termed cases of secondary syphilis, and other severe forms of disease arising from the action of mercury, in constitutions predisposed to scrofula.

The difficulty of distinguishing cases that require a further use of mercury, from those in which disease is kept up by the continued action of that medicine, after the administration of it has ceased, has led me to adopt as a rule, never to prescribe it, where it has been previously given in unascertained quantities; and three-fourths of the cases I have met with, have been immediately relieved, and to the best of my knowledge ultimately cured, by the use of the preparation allud-

ed to, and the decoction of sarsaparilla, without the necessity of a further use of mercury.

In well-marked primary cases, I have uniformly prescribed mercury, and have witnessed disappointment, when they were treated with sarsaparilla and guaiacum, or the muriat of gold. The latter is stated by Dr. Johnson, the intelligent House Physician, to increase the susceptibility of the salivary glands, to the action of mercury, in cases where that mineral has been exhibited for the cure of sores which had not yielded to the muriat of gold.

Many cases of primary sores on the penis, perhaps not less than one-fourth of the whole number that have fallen under my observation, have speedily yielded to such means as were calculated to relieve any existing state of irritation of the system; such as venesection, rest, temperance in the use of ardent spirits, saline cathartics, frequent washings with soap and water, and the use of dry lint. I have indeed rarely prescribed mercury without this preparatory treatment.

Almost an equal number of cases have shown their dependence upon disorders of the digestive organs, by their rapid improvement and ultimate cure, under the administration of mild cathartics, simple diet, and the occasional use of some of the purer bitters.

Delay in the use of mercury has often shown me that sores, which I suspected to be chancres, proved not to be so, and I have never had occasion to regret that delay, when the sores afterward clearly showed their venereal character.

I have carefully abstained from the use of mercurial washes in doubtful cases, as tending to obscure their character, unless when I had become more convinced of their syphilitic nature; in which case I consider their improvement, by the local application of mercurial preparations, after other washes had failed, as an evidence of the necessity of a regular course of mercury. The milder preparations, especially the pill: hydrargyri have appeared to me preferable to those which are more active, and I have never produced designedly more than a slight degree of redness and tenderness of the gums.

The following is the formula for the preparation of the syrup of sarsaparilla and guaiacum.

R. Smilac. Sarsaparill.

Lig. Guiac. Off. aa lb. j.

Petal Ros. Gall. (sometimes omitted)

Gum. Mimos. Nilot.

Fol. Cas. Sen. aa ʒi.

Rad Amom. Zing. ʒss.

Aq. Font. Oxx.

Boil the first ingredients in the water for one hour, strain, and to the residuum add the same

quantity of water as before, boil for two hours, and toward the end of the boiling, add the other ingredients, strain and to both decoctions, add,

Sacch. Com.

Mel. Opt. aa lb. iij.

and boil the whole to the consistence of a syrup.

Dose \mathfrak{z} ij. to men, \mathfrak{z} i. to females, twice a day.

The patient is directed to take the first dose early in the morning, and the second, four hours after dinner. He is also to take, during the day, twelve tumblers of the sarsaparilla ptisan, seven before dinner, beginning two hours after having taken the first dose of the rob, and five after dinner, beginning also two hours after the second dose.

Sarsaparilla Ptisan.

R. Rad. Smilac. Sarsap. \mathfrak{z} ij.

Aq. Fontan. Ovi. M.

Boil to Qiv.

In summer the strength may be diminished.

The rob of Laffecteur which has attained so much celebrity, is believed to be an analogous preparation, containing however a small portion of the muriat of mercury. I have found it produce a great aggravation of the symptoms in a case of secondary syphilis, or more correctly speaking of mercurial irritation, which immediately improved, and was at length cured under the use of the syrup.

It gives me pleasure to subjoin the following extract of a letter I have lately received, from my venerable friend, Doctor Thomas Parke of Philadelphia, whose extensive experience in complaints of this kind, for more than forty years, in the Pennsylvania Hospital, gives great weight to his opinions.

“ I directed agreeably to your request, a quantity of the compound syrup of sarsaparilla and guaiacum to be prepared, and selected a number of patients for whom I thought the remedy was adapted. I have now the pleasure of informing you, it has afforded relief in *nearly all* the cases in which I recommended it to be used ; some of which were effected with secondary syphilis, imperfectly cured by mercury, and others with obstinate rheumatic complaints. In all cases the pains were speedily diminished, and in many instances wholly removed.”

It gives me pleasure to add in the following extract of a letter I have lately received, from my friend, Doctor Thomas Park of Philadelphia, whose extensive experience in complaints of this kind, for more than forty years, in the Pennsylvania Hospital, gives great weight to his opinion. I directed agreeably to your request, a quantity of the compound syrup of sassafras, and amount to be prepared, and selected a number of patients for whom I thought the remedy was adapted. I have now the pleasure of informing you, it has afforded relief in nearly all the cases in which I recommended it to be used; some of which were effected with secondary syphilis, indirectly cured by mercury, and others with obstinate rheumatic complaints. In all cases the pains were speedily diminished, and in many instances wholly removed.

I have the honor to be, Sir, your obedient servant,

THOMAS PARK, M.D.

A CASE
OF
CONTRACTION OF THE VAGINA,
FROM
SLOUGHING CAUSED BY
A TEDIOUS LABOUR,
IN WHICH
THE CICATRIX

**WAS SAFELY DIVIDED BY A BISTOURIE TO FACILITATE
PARTURITION DURING A SUBSEQUENT LABOUR.**

BY ALEX. H. STEVENS, M. D.

A LADY aged 21 years, in the autumn of 1815, remained in labour with her first child during a space of nearly three days. The presentation was natural, and the obstacles to a more speedy delivery appeared to have arisen from the disproportion between the head of the foetus and the size of the pelvis, and the cessation of the pains in an advanced stage of parturition. The child, however, was delivered without manual assistance, and is believed to have died during the labour.

The pressure of the child's head upon the soft parts of the mother, occasioned extensive sloughing of the vagina, and incontinence of urine. The lady's life was despaired of. She could not be lifted up in bed for six weeks :—During this time, she took porter freely, and yest was applied to the parts. For the latter application, a decoction of oak bark was afterwards substituted, and at length when the ulcer left by the separation of the slough became healthy, it was dressed with dry lint, and means were taken to prevent the contraction of the vagina.

At the end of six months, when I first examined the patient, there was a firm band extending across the vagina, and barring the introduction of the finger. It appeared to be formed not only by the approximation of the lateral parts of the ulcer, but also of its posterior and anterior edges, so that the vagina was both contracted and shortened. The incontinence of urine was so great as to prevent the lady from going into company. The moment she rose from a sitting posture, the bladder was evacuated. Her Physician had prescribed, with little or no advantage, preparations of iron, tincture of cantharides, and a blister. I recommended aspersions of cold water on the loins, the injection of a decoction of linseed, and employed various mechanical means of dilatation, such as cylinders of wood, sponge wrapped in

varnished silk, &c. These created much pain when introduced ; but they were pretty regularly applied for the space of six months ; at the end of which time, the finger could be introduced into the vagina, beyond the stricture, though with some difficulty, and there was a little increase in the power of retaining the urine. In this state, to the great terror of herself and her friends, she became a second time pregnant.

The treatment adopted during the first three or four months, was directed entirely to the relief of her distressing sickness of stomach, and a severe bearing-down pain with which she was afflicted. After the fourth month, with occasional interruptions from the continued sickness of stomach, she used the flaxseed decoction, gum elastic tents, and hip-baths ; living at the same time sparingly, and taking, at the suggestion of some of her friends, a decoction of slippery elm.*

At the expiration of the seventh month, the lady, having in the intermediate time, suffered constantly, severe pain in the vagina, arising, as I conclude, from the tension of that canal by the ascent of the uterus into the abdomen, the stricture had dilated sufficiently to admit a finger freely. Discouragement and indisposition caused her to ne-

* This is said to diminish the size of the foetus, and to procure easy delivery.

glect the regular use of the hip-bath and injections, from the end of the 7th, to the end of the 9th month, yet during this period the greatest enlargement of the stricture took place, perhaps in some degree in consequence of the warmth of the season, but owing chiefly I apprehend to the relaxing effects of the secretion, which takes place particularly in the latter weeks of utero-gestation.

At 4 in the morning of the 9th of August, regular labour pains came on, and the head presented; the vagina *external to the cicatrix* became perfectly relaxed, and the cicatrix itself was so far dilated as with perfect ease to admit a finger. At 7 the membranes broke spontaneously, although I endeavoured by keeping the lady perfectly quiet, and by requesting her not to exert herself, to retard that occurrence.

The pains continued natural, the cicatrix gradually yielded so as to leave an opening of the size of half a crown; at 9 o'clock, a powerful contraction of the uterus, the last of a succession of severe pains, lacerated the membranous cicatrix, posteriorly and a little on the right side; and a full-sized child was born in a state of asphyxia, from which however it was recovered. No injury was done to the perinæum.

The patient had an easy getting-up, and nursed her infant. The contraction of the vagina returned, but not to so great a degree as before her

first confinement, and the incontinence of urine continued.

In September 1818, she became pregnant a third time—the incontinence of urine became considerably diminished during her gestation, and at the seventh month I examined her, and found the contraction somewhat less, than at the same stage of her second pregnancy. Labour came on at the full period; the presentation was natural, the membranes broke about five hours after its commencement. The external parts became relaxed as before, but although the cicatrix had dilated to an inch or more in diameter, and the pains were unremitted and severe, the head made no farther progress; being evidently obstructed by the cicatrix which appeared to be incapable of laceration or further distension. Under these circumstances, being apprehensive that the powerful contraction of the uterus would either endanger the life of the child, or rupture the uterus, I introduced while the pains were least urgent, a blunt bistoury between the head of the child and the membranous cicatrix, and divided the latter by several incisions, to the extent of an inch, as nearly as I could judge, at the point where it had formerly given way. This gave no pain, and the child was expelled a few minutes afterwards. Both mother and child did well, and are at the present time, June 1820, without

any treatment, the contraction of the vagina and the incontinence of urine have to a considerable degree disappeared.

In September 1818, she had a third time the incontinence of urine became considerably diminished during her gestation, and in the seventh month I examined her, and found the contraction somewhat less, than at the same stage of her second pregnancy. Labour came on in the fifth period; the presentation was natural, the membranes broke about five hours after its commencement. The external parts became red and as before, but although the cicatrix had distended to an inch or more in diameter, and the pains were unmitigated and severe, the head made no further progress; being evidently obstructed by the cicatrix which appeared to be incapable of lateral extension or further distension. Under these circumstances, being apprehensive that the power of contraction of the uterus would either endanger the life of the child, or rupture the uterus, I introduced while the pains were least urgent, a blunt distence between the head of the child and the membranous cicatrix, and divided the latter by several incisions, to the extent of an inch, as nearly as I could judge at the point where it had formerly given way. This gave no pain, and the child was expelled a few minutes afterwards. Both mother and child did well, and at the present time, June 1820, without

A CASE

OF

ARM PRESENTATION,

**ATTENDED WITH UNTOWARD CIRCUMSTANCES, IN WHICH
THE CHILD WAS EXTRACTED IN A PECULIAR MANNER,**

BY ALEX. H. STEVENS, M.D.

I WAS called in the night of March the 9th, 1819, to a village about ten miles from this city, to visit a lady who was represented to have been in labour since the morning of the preceding day. —She was healthy, well formed, and the mother of several children. For three months previous to her confinement, she had been obliged to keep her bed, in consequence of a strain in getting out of a waggon, and her feelings had led her to anticipate unusual difficulty in her accouchement. Two medical gentlemen were in attendance, one of whom had been sent for only a few hours before I arrived. What the original presentation had been, could not be ascertained; but the cord was stated to have protruded, and the waters to have been discharged in the first periods of the labour. The practitioner last called in, after an ineffectual effort to turn the child, had brought

down the right arm, which, as far as the elbow, was without the external parts, and in some measure deprived of the cuticle: there was no pulsation in the cord. Since the preceding morning the pains had been severe, and now they had the peculiar character which usually attends the last stage of parturition: the external parts were exquisitely tender.

When she consented to an examination, I found, by the feel of the shoulder, the spine, the ribs, and the right side of the lower jaw, that the child lay with the trunk across the pelvis, with the head to the left side, and the buttocks to the right of the mother; the back to the abdomen, and the sternum to the posterior surface of the uterus. The following cut illustrates my idea.



As the bladder had emptied itself, and as there was great fulness of the pulse, it was deemed advisable to take some blood from the arm and administer a large opiate, in the hope of gaining a truce from the unremitting pains, to turn the child, and bring down the feet. In this hope we waited from four o'clock of the morning of the 10th, until seven. But finding the pains continued, and judging that no advantage could result from further delay, as the pulsation had ceased in the cord, and the child was unquestionably dead, I cautiously introduced a blunt bistoury, and dissected off the right arm, the woman lying on her back, with her feet over the foot of the bed, one supported by each of the gentlemen who assisted me. I then pushed firmly on the axilla with my thumb, but it could not be pressed back. I next attempted to introduce my hand and get at the feet; a pain came on, my hand was then kept quiet; it remitted; I repeated the attempt, but with no better success: I changed hands, but the contraction of the womb increased by the slightest movement, and kept the hand firmly wedged as if in a vice. In the hope of making more room I then opened the chest and removed the contents; when introducing first two fingers, and afterwards the blunt hook, I endeavoured by that hold to bring down the body, but ineffectually.

Another plan succeeded better, and it is chiefly with a view of suggesting this (of which I do not recollect to have heard or read,) that the present case has been drawn up. This was the making an incision as high up on the back as I safely could, with a blunt bistoury passed along the forefinger; inserting a blunt hook into it, and pulling in a direction obliquely downwards and forwards, so as to bring the buttocks down, and having partly succeeded, I made a second incision, immediately above the hip, introduced the hook as before, and extracted the child, breech foremost. The placenta followed and was immediately removed, in a very offensive state.

The woman bore the operation, which lasted until half-past eight, with great fortitude. The left leg is partially paralysed.

Second Day, 5 p. m.—The lochial discharge has been regular. Has had several severe chills succeeded by great heat of the skin, copious diaphoresis, thirst and dryness of the tongue. Is occasionally delirious, passes a great quantity of water from the bladder with difficulty. Bowels have been opened; fomentations have been applied to the abdomen, which is swollen and tender to the touch in the region of the uterus. Pulse frequent, and, except during the chills, full. Seeing a rigor coming on, I advised hot salt, in a woollen stocking, to be applied to the pit of the

stomach and the feet; and a copious draught of catmint tea to be taken. The chill terminated sooner than any which had preceded it.

6 p. m.—Pulse full and frequent; great heat of skin; general and profuse sweating; delirium. I took ℥xiv of blood from the arm. It was agreed to apply spirituous fomentations to the abdomen, a poultice of linseed, with solution of the acetate of lead to the pudenda, and to give of the acetite of ammonia ℥ss every two hours.

9 p. m.—Symptoms rather improved. She was again bled to ℥xii . Sinapisms to be applied to the feet.

Fifth Day.—Rigors have been less severe; tongue furred, and somewhat yellow. Skin constantly moist; occasional delirium. Bowels confined. Agreed to give three grains of calomel at night; a solution of Epsom salts on the following morning. Sinapisms to the abdomen.

Seventh Day.—The medicine operated well. Tenderness of the abdomen lessened; pulse soft and frequent. Complains of want of sleep; we prescribed the effervescing draught, with forty drops of laudanum.

Eleventh Day.—Continues to improve. Has taken an infusion of hops—agreed to continue it, and to give freely of nourishment.

Fourteenth Day.—Better—is able for the first time to move the left leg, and to move on her

knees from one bed to another. Is allowed the use of animal food.

Seventeenth Day.—Appetite good—strength returning—has set up in bed several times.

Mrs. V. has since entirely recovered.

Doctor Samuel Bard, President of the College of Physicians of New-York, who has inserted the above case in his system of midwifery, introduces it to his readers with the following remarks.

“The rule therefore in all arm cases is, that when the accoucheur is present before or soon after the membranes burst, to attempt the delivery immediately, before the waters shall be fully discharged by introducing the hand and turning the child.—That even after the waters have been discharged for some time, we are cautiously to make the attempt; but never before quieting the strong action of the womb by bleeding and opium.—But that in all cases after the waters have been long discharged, and the womb is found so strongly contracted about the body of the child as to make it necessary to use considerable force in introducing the hand into the womb, then to mutilate the child and get it away in the easiest manner possible; for in these cases the child is always lost, and the mother’s life is necessarily brought into great danger, and has frequently been sacrificed by using too much force in the introduction of the hand to get at the feet. But instead of aban-

doing the case to nature, after taking off the arm and emptying the cavities, we are to persist in cautious efforts to get it away as soon as possible—to accomplish which, the following case, which appears to be a happy mode of assisting nature in her efforts to bring about the evolution described by Dr. Denman, I am persuaded, will frequently be found the most safe and easy.

REMARKS
ON THE
MEANS OF ARRESTING
THE COURSE OF THE BLOOD,
THROUGH THE TIBIAL ARTERIES,

BY ALEX. H. STEVENS, M.D.

IN one of the numbers of that very valuable work, the New-England Journal, is an engraved representation of a tourniquet, invented by Dr. Moore of Massachusetts, which appears to me to possess advantages over those commonly employed. As that journal is widely circulated over this country, it is not deemed necessary to give any description of the instrument. My design is rather to speak of it in relation to those very serious cases in which, by reason of a wound, or aneurism, or of ulceration, or laceration of either of the tibial arteries after fractures of the leg, it becomes necessary to interrupt the course of the blood in one or both of these vessels.

I was sent for to see a man who in carrying some glass on a hand-barrow, had fallen under his load, and received a deep cut, extending from

a point about an inch behind and below the internal ankle, to the middle of the inner side of the foot. The blood had been staunched several times by compression, but the bleeding returned as the circulation became stronger. I was in doubt whether it would be best to take up the posterior tibial artery, but concluded to trust to careful compression of the vessel behind the internal ankle; and this proved effectual. The bandage which retained the compresses extended over the whole foot, and these were not removed until they were moistened with pus.

Doctor Physick I am informed has successfully employed an apparatus of his own invention, for compressing the anterior tibial artery. It appears to me, that the tourniquet of Dr. Moore may be employed for the same purpose with great advantage.

In order to compress the anterior tibial artery, I would advise that a short hollowed splint should be laid on the inner and back part of the leg. By this means the pressure is diffused over so large a surface that it is not felt, excepting in a spot immediately over the artery, about as large as the thumb would cover. If I may draw any conclusion from the facility with which I can compress my own anterior tibial artery, that vessel may be commanded more than half way up the leg. The pressure long continued, would no doubt become

painful, but I think it need not be insupportable, and if necessary, it might be greatly moderated by alternately compressing the tibial and the femoral arteries.

The posterior tibial artery is more accessible than the anterior. Yet that surgeon must be far more dexterous than the great majority of those who are entrusted with the care of wounded arteries, who can place a ligature upon this vessel more than three inches above the internal ankle, without including the accompanying nerve. A late number of a Parisian Journal contains a case in which the posterior tibial artery and nerve were included in a ligature for a wound of the former, only a hand's breadth above the internal ankle. Although the nerve was included, its functions were restored.

In a wound of the posterior tibial artery above the middle of the leg, which occurred in this city some years since, that vessel was tied by dividing transversely the fibres of the gastrocnemii muscles notwithstanding which the use of the leg was perfectly restored.

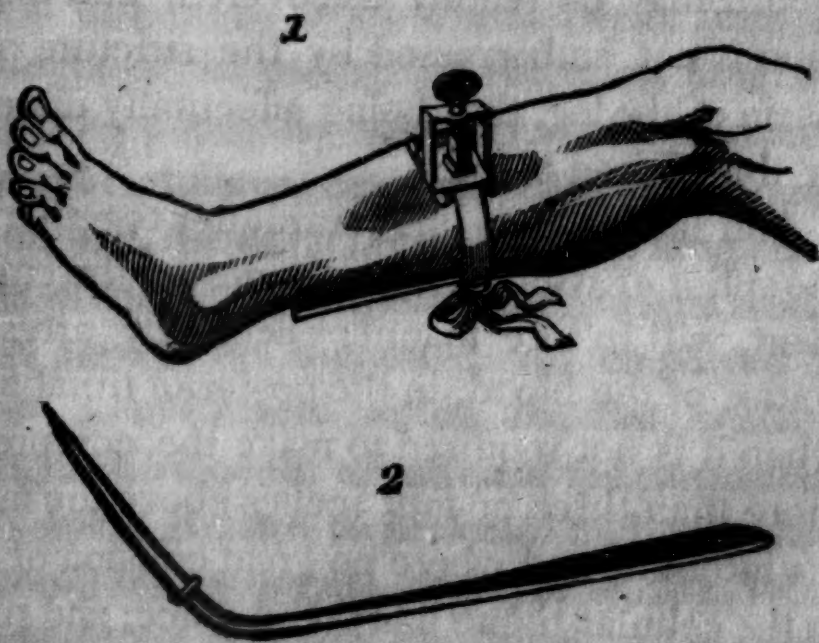
The cursory reflexions contained in this paper lead me to conclude, that the anterior tibial artery may be effectually compressed in all the lower half of the leg, at a greater or less height however according to the size of the limb, and the degree to which it is injected with blood; and

that Dr. Moore's tourniquet, applied in the manner I have suggested is the most convenient means of accomplishing this object:* but in cases where an extensive effusion of blood takes place, and separates the lamina of cellular membrane, the artery cannot be compressed: while on the other hand it is more easily than in the former cases, subjected to a ligature; because when the clots of blood are turned out from this false aneurism, as the French term it, the bleeding mouth may be readily discovered, and the surgeon is not embarrassed by the stricture of the fascia of the leg, that being effectually distended by the effused blood.

And lastly, that this tourniquet together with the splint of which I have suggested the employment, will in like manner effectually arrest the course of the blood, in the posterior tibial artery, when it is not required to make the compression more than three or four inches above the malleolus internus, and where no great effusion of blood in the cellular tissue has taken place; and that on the other hand such effusion will facilitate the application of a ligature, from the use of which neither the necessity of including the posterior tibial nerve, nor the necessity of dividing muscular fibres should deter us.

* See figure 1, page 201.

The application of these remarks to cases of aneurism of the tibial arteries is too obvious to require explanation.



THE UNIVERSITY OF CHICAGO



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REMARKS

FISTULA LACHRYMALIS;

BY ALEX. H. STEVENS, M.D.

THE numerous evils which result from an obstruction of the passage of the tears from the lachrymal sac into the nose, occasioning successively and in different cases, epiphora or lachrymal tumour, and fistula lachrymalis, have long engaged the attention of surgeons, and various modes of cure have been suggested and employed by eminent practitioners within the last century. In England; since the rejection of the proposition of Mr. John Hunter to perforate and remove a portion of the os unguis, the style of Mr. Ware has been pretty generally employed, and notwithstanding the objections to it, arising out of the necessity of retaining it in the ductus ad nasum, for an indefinite length of time, seldom less than a month, and the frequent recurrence of the disease after that treatment, it was nevertheless preferred to all previous methods of cure. In France and I believe on the continent generally, the practice

varies greatly with different oculists, but the seton and the leaden wire are most frequently employed.

Within a short time Mr. Dupuytren the surgeon of the Hotel Dieu has made a great improvement in this branch of ophthalmic surgery, by the invention of a new instrument, which almost removes uncertainty from the result of the operation. His operation, which is not difficult of performance, is less painful than the methods generally in use, and it is stated to have succeeded in a proportion of forty-nine cases out of fifty. The instrument, of which we have given a delineation,* consists of two parts; a bent pyramidal piece of iron, approaching in its form to a cylinder, of which the extremity is passed through a small gold tube, exactly fitted to it. The latter is constructed of such dimensions as that when introduced into the ductus ad nasum, its extremities correspond with those of the duct. Its conical form prevents it from sinking too low, so as to irritate or otherwise injure any part of the cavity of the nose. The sac previously divided for the introduction of this canula, is made to heal over it, and the canula remains behind, affording of course a free passage for the tears and removing the cause of the disease.

* See figure 2, page 201. The canula is one inch long and one line and a half in its greatest diameter.

A CASE
OF
CRURAL HERNIA.

BY ALEX. H. STEVENS, M.D.

DOCTOR ELLIOT of Harlaem sent to me a poor man whose wife was labouring under strangulated femoral hernia. I found the tumour on the left side, about the size of a pigeon's egg. Venæsection, tobacco injections and the application of ice in a bladder, having been tried without effecting the reduction, I proceeded in presence of Drs. Post and Mott, to relieve the stricture by an operation. The patient was accordingly placed upon a table by candle light. A crucial incision was made over the surface of the tumour, and its investments successively divided. A small quantity of reddish serum escaped from the sac and the intestine was of a chocolate colour. The adhesions of the intestine to the sac having been carefully broken, I employed a common blunt bistoury to divide the stricture and in this part of the operation I found great difficulty: the femoral ligament which was the seat of the stricture could be plainly enough felt, but the intestine had so ex-

panded over the surrounding parts, that I knew not how to remove the strangulation without cutting it. To push an intestine in that state to one side would lacerate it—to introduce a bistoury into the stricture without injury to the gut appeared almost impracticable; for it constantly doubled over the edge. After many trials and great hazard of wounding the gut, I succeeded in getting the end of the instrument a little way within the stricture, and by turning its edge upwards and inwards, I made a slight incision through the border of the femoral ligament. The intestine was next emptied of its contents by gentle pressure, and carefully returned. Doctor Post then pressed upon the abdomen and the wound was filled with serum, which returned into the abdomen when the pressure was removed. The crural ring after its enlargement by the bistoury was judged not to exceed one third of an inch in diameter. The woman recovered rapidly after the operation, the wound soon healed, and a few weeks afterwards she worked as usual, without even wearing a truss.

I do not know if my readers will see in this case any thing more important than an operation imperiously called for and successfully performed, but to myself it has been a source of much reflection, and I hope of some improvement. The best surgical writers dwell chiefly upon the

means of avoiding the obturator artery and the cord while in fact the division of the intestine by the edge or point of the bistoury is much more to be apprehended.

It is the greater risque of cutting the intestine by the incision inwards, as recommended by Ginbernat, Lawrence and others, that renders this practice objectionable, and which renders preferable the incision upwards, or upwards and inwards as suggested by Mr. Astley Cooper. The incision in any direction need not be so extensive as to divide any of the adjacent bloodvessels.

It appears to me that this source of danger may be in a great measure obviated by the use of an instrument, I have had constructed for the purpose of dividing the stricture, and of which a representation is given in the following cut.*

The edge of the instrument extends only one half an inch from the point, and the concave part of it is designed to lie on the hernial tumour, while the point is inserted under the femoral ligament. By slightly elevating the handle, the division of the stricture may be accomplished I think with more ease and less danger of wounding the gut, than by any other means with which I am acquainted.

* See figure 3, page 209. The length of the instrument is five inches.

Dr. Hewson of Philadelphia informed me, that after the division of the stricture in a case of hernia, the state of the intestine was such as to make it doubtful, whether it might be safely returned. *The intestine was covered with cloths wetted with blood-warm water, for the space of an hour,* and the improvement of its appearance at the expiration of that time showed that it might be safely returned, which was accordingly done. This appears to me to be a very excellent plan, which so far as I know has not been recommended by any writer on the subject.

I am induced to deviate somewhat from the strictly clinical plan of this work, in order to contribute to the diffusion of the knowledge of a new mode of curing artificial anus, recently invented by M. Dupuytren of Paris. The instruments he has contrived for the purpose are a forceps,* with separable blades, and† another more complicated (and perhaps not indispensable) instrument for making compression on the open mouths of intestine. The forceps are introduced one blade in each end of the intestine. The blades are then closed by a screw, by which the contiguous parts of the intestinal cylinders are

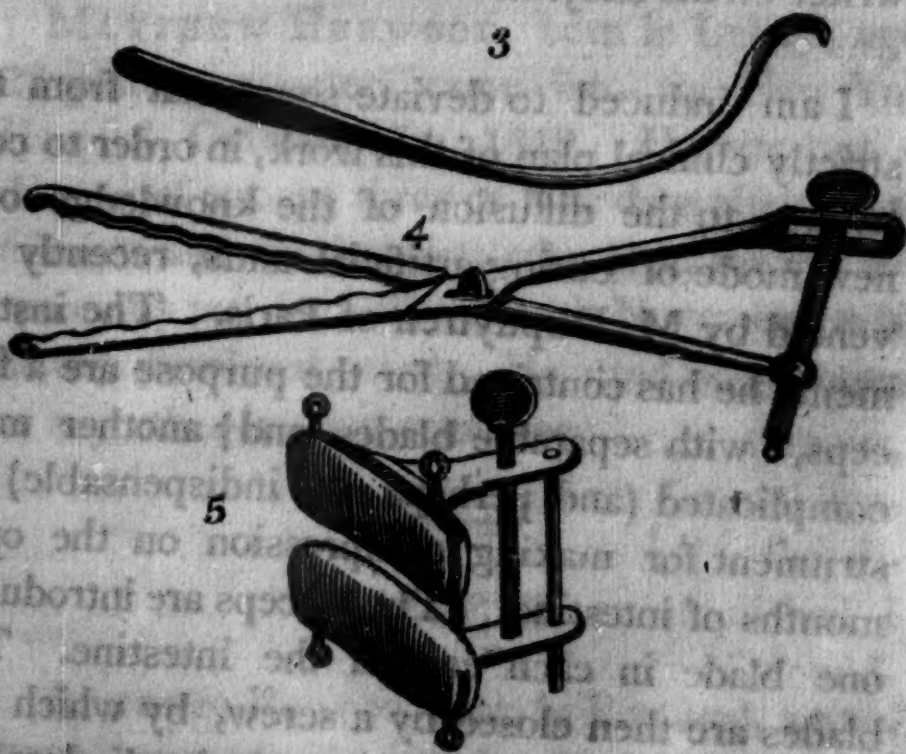
* See figure 4. The length of the forceps is seven and a half inches.

† The length of the cushions is three and a half inches. The rings are designed to receive bands to sustain it in situ.

pressed together, the consequence of which is, that they inflame, adhere, and finally ulcerate and are absorbed; by which a communication sufficient for the passage of the fæces is formed, and finally the external opening heals up.* Mr. Charles Bell proposes to accomplish the same end by means of a seton;† a practice successfully adopted by Dr. Physick many years since.

* Dictionnaire des Sciences Medicales, Tome. xxi. p. 135.

† Quarterly Reports.



the **CONORRHEA** of the rectum, the consequence of which is, that
 the excretion of the rectum is formed, and finally
 absorbed; by which a communication is formed
 into the rectum, which is highly inflamed and is
 treated together, the consequence of which is, that
 means of a secret, and is necessarily adopted
 by Dr. Physick, and is necessary since
 Dr. Physick, and is necessary since

CASE I.

MATTHEW HERWOOD, born in Ireland, aged
 26 years, carpenter, came into the New-York
 Hospital, October 15th, 1819. He was put on
 the use of cups three or four days after his ad-
 mission, and continued to take of it, three times
 a day, till the 18th November, when
 he was dismissed cured. He used no injections,
 or any other internal remedies.

CASE II.

ANTONIO REAVE, born in Portugal, aged 26
 years, seaman, entered the Hospital September
 28th, 1819, with a copious purulent dis-
 charge from the urethra. He used a great variety
 of internal remedies and injections for several

CASES
OF
GONORRHOEA,
CURED BY CUBEBS,

BY ALEX. H. STEVENS, M.D.

CASE I.

MATTHEW HERWOOD, born in Ireland, aged 26 years, carpenter, came into the New-York Hospital, October 15th, 1819. He was put on the use of cubebs three or four days after his admission, and continued to take of it, three desert spoonfuls per day, till the 16th November, when he was dismissed cured. He used no injections, or any other internal remedies.

CASE II.

ANTONIO REAPOS, born in Portugal, aged 26 years, seaman, entered the Hospital September 28th, 1819, with a copious muco-purulent discharge from the urethra. He used a great variety of internal remedies and injections for several

weeks, with but a trifling abatement of the running. About the 25th November he was put on the use of the cubebs, and discharged cured, on the 21st December, 1819. He began with a desert and increased the dose to a table-spoonful ter in die.

CASE III.

PETER OSTRAND, born in Sweden, aged 38 years, entered the Hospital December 28th, with well marked symptoms of clap, of ten days duration. He was ordered a saline cathartic, and directed to take the cubebs, by January the 12th he was entirely cured and dismissed.

P. S. This case yielded quicker and more remarkably than any others in which cubebs has been used.

CASE IV.

JOHN SINCLAIR, born in England, aged 24 years, a labourer, entered the Hospital December 28th, 1819, with a running of six weeks standing, slightly purulent and watery. I gave of the cubebs as in the other cases, a desert spoonful three times a day, and increased the quantity to a large table-spoonful. It first increased the discharge in this

case for eight or ten days, but after that it began to diminish and he was dismissed, perfectly cured, January 28th, 1820.

CASE V.

THOMAS RUSSEL, born in New-York, aged 39 years, a baker, entered the Hospital January 4th, 1820, with clap of three weeks duration. It was purulent, copious and accompanied with extreme pain and scalding in passing his urine. He took a saline purge in the evening of his admission, and on the following morning was put on the use of cubebs. This relieved very considerably by the second day, the ardor urinæ, but increased very much the discharge for a fortnight. It then began to lessen and in four or five days he was dismissed perfectly cured.

CASE VI.

WILLIAM RANKING, born in Ireland, aged 24 years, was admitted December 17th, with a copious discharge of white thick matter, accompanied with much ardor urinæ, and commenced the use of the cubebs on the second day of his admission. He took it four weeks, beginning with the usual

dose, and increased to an ounce per day, without the least abatement of the discharge. Omitted the remedy, gave him an injection, and he went out in four days after using it, nearly or entirely cured.

P. S. None of the above patients complained of any unpleasant effects whatever from the remedy.

The notes of the above cases were drawn out by the House Surgeon, Mr. James C. Townsend (now Dr. Townsend of Oyster Bay.) Here follow two additional cases by Dr. Johnson the House Physician.

CASE VII.

JAMES GEORGE, born in Massachusetts, aged 50 years, a seaman, was admitted into the New-York Hospital, December 10th, 1819, labouring under a discharge of purulent matter from the urethra, severe scalding while in the act of passing his urine, distressing chordee at night, and all the symptoms of gonorrhoea. He had contracted the disease a fortnight before his admission and had taken no medicine, nor made any application to the seat of the disease. As the prepuce was much inflamed he was bled, freely purged with salts,

and ordered to confine himself to a vegetable diet. He was directed to bathe the parts frequently in tepid water, and to apply an emollient poultice. The above treatment was continued for three or four weeks without much abatement of the symptoms of his disease: the inflammation was partially subdued, but the scalding, running and chordee remained. He was now ordered \mathfrak{zss} of powdered cubebs, to be taken in divided doses every day, and all other remedies were omitted. He immediately began to improve, and was in a few days discharged cured, after having taken \mathfrak{zvi} of the medicine.

CASE VIII.

JAMES BECKS, born in Maryland, aged 27 years, seaman, was admitted into the New-York Hospital, December 17th, 1819, with symptoms precisely similar to those related in the case of James George, he was treated on the antiphlogistic plan for four weeks without success, when he was directed to take \mathfrak{zss} of powdered cubebs, in divided doses every day. His symptoms soon began to abate, and he was discharged cured, after having taken \mathfrak{zvi} of the cubebs.

The above cases may be considered as fair examples of the usual effect of the cubebs in go-

norrhœa. It is scarcely necessary to add, that I consider that article as possessing more efficacy in this disease than any other with which I am acquainted.

Although unwilling to believe it a specific, I am unable to point out any stage of the disease in which it does not appear to be generally beneficial. In discharges from the uretha attended with stricture I have not had occasion to try it; neither have I ventured to prescribe it during the presence of high inflammation.

CASE VIII.

James Black, born in Maryland, aged 27 years, was admitted into the New-York Hospital, December 17th 1819, with symptoms precisely similar to those related in the case of James George; he was treated on the antiphlogistic plan for four weeks without success, when he was directed to take ʒss of powdered cubeba, in divided doses every day. His symptoms soon began to subside, and he was discharged cured, after having taken ʒss of the powder. The cure was permanent, and he has since remained in perfect health. This case may be considered as further evidence of the efficacy of the cubeba in gonorrhœa.

AN
ACCOUNT
OF THE
YELLOW FEVER,

WHICH APPEARED IN VARIOUS PARTS OF THE UNITED STATES, DURING THE SUMMER AND AUTUMN OF 1819.

BY JOHN WATTS, JR. M.D.

From the year 1805 to 1819, New-York escaped the visitation of yellow fever. Throughout that period, the city and state generally enjoyed an unusual exemption from fatal epidemics; with the exception of the occasional occurrence of spotted fever, of peripneumonia typhodes, of what was denominated the winter fever of 1812 and 13, of whooping cough, dysentery, small-pox, scarlatina, and measles, to a limited extent in this city, and in local districts of the state. During the greater part of this time, the summers were cooler than usual; many of them being much below the ordinary heat of summer, and several of the winters were uncommonly mild and open. A very high degree of heat occurred at different times for a few days only in succes-

sion, in the course of several of the summers, and an extraordinary degree of cold was occasionally experienced for some days together, in the progress of a few of the winters; the absence of the accustomed uniformity of temperature was remarked of both summer and winter.

The year 1819 brought a return of what has been aptly styled an "old-fashioned summer," in reference to its temperature, but unaccompanied by the frequent showers of rain, and storms of thunder and lightning, which characterised many of the summers that intervened from 1790 to 1805. Little rain fell during the winter and autumn of 1818 and 19, and the winter passed with unusually light falls of snow. Early in the summer the earth became remarkably dry, vegetation withered and disappeared, and the wells and springs, in every direction to some distance from the city, were almost drained or exhausted. Early in the month of June, the mercury in Fahrenheit's thermometer rose above 90°, and seldom descended to summer heat in the course of that month. A higher average temperature marked the month of July, and in the course of August, the mercury rose to 94°, and rarely fell below 80°. Nearly the same elevation of the thermometer continued through the first weeks of September. This range of heat obtained over a great part of the union, and its effects were apparent on the

health of the people, producing in some districts of country, aided by local causes, intermittents, remittents, dysenteries, and in some places, what was called, typhus fever, but which we believe to have been generally bilious febrile complaints.

In this city, and indeed in all the atlantic cities, and through the country generally, there was an unusual mortality, especially among children. The weekly number of deaths in July and August, frequently exceeded one hundred, and during the first weeks of August amounted to one hundred and ten or one hundred and twelve a week; for many weeks together the deaths were almost unprecedented in this city.

In the state of New-Jersey, dysentery and bilious fever prevailed in many places to an alarming extent, and often proved fatal in the course of a few days. In various parts of this state the same diseases appeared, and in some instances destroyed whole families, particularly in the western part of the state. Many of our inhabitants were known to be suffering from high grades of fever, and serious apprehensions were entertained that this city was about to witness another return of the same pestilence, which had so often spread dismay among us. Unfortunately the propriety of these apprehensions was soon evinced by the appearance of a malignant disease in a particular section of the city. Of this we propose to give

a brief history, after furnishing some account of a similar disease that prevailed during the same season in many other cities of the United States: in doing which, we shall avail ourselves not only of the information we have received, but shall lend our efforts to circulate more extensively, extracts from such publications as have appeared on the epidemic of that season; desirous of contributing to the means of preventing the recurrence of this calamity.

About the end of June, or the beginning of July, a malignant fever made its appearance in Boston, of the same character with the disease which had appeared there in 1798 and in 1802; it was confined to the same place, and to equally narrow limits with the yellow fever of those years. The epidemic of 1798, appeared in certain parts of the town, "occurring only in persons who lived or passed much of their time about the town dock, State-street, Liberty square, around Fort Hill, and in some similar situations; that is to say, in parts which are low, and on the eastern and southern borders of the town, though not in every situation of this kind."* It is worthy of remark, that this fever whenever it has occurred in Boston, has made its appearance much earlier in the season, than it has in most of the cities to the

* See New England Journal of Medicine and Surgery.

south.* It has appeared in that town at three different periods, and each of those periods were during summers that were remarkably hot. The section of the town where uniformly it has first appeared is around Fort Hill, and during the last season, "mostly within one small square on the south-eastern side of the Hill;" at first it did not extend over the whole of this square, the longest side of which is stated to be "about twenty-five rods in length."† It gradually spread over a larger district, but did not leave the circle of Fort Hill, nor did any of the subsequent cases appear to have been derived from individuals who had previously sickened—cases of the disease occurred in the persons of those who had visited that section of the town, but in no instance did they communicate it to others. The most diligent examination of the origin of the disease, did not induce the least suspicion of any foreign cause. On this point there appears to be scarcely any difference of opinion; the physicians generally having united in the belief, that the fever of Fort Hill originated in the soil; but what this peculiarity of soil is, we have yet to learn. "It was not a marshy soil. The principal seat of the disease was on the side of a hill, where the decli-

* See North American Review.

† See New-England Journal.

vity is sudden and sharp. There was not any *extraordinary* filth about the spot. The houses of the poor, and the yards about them, were dirty, but not more so, certainly, than the dwellings of the poor in other parts of the town, nor so much so as many houses in the country. The population was not crowded in a remarkable degree. There are extensive flats in the neighbourhood, but not so extensive as in some other places, and these flats are covered with the salt water once in twelve hours. We might however have thought it possible that they furnished the morbidic poison, but that the people who were on the side of Purchase-street, nearest the water, and whose situation in other respects was not preferable to that of their neighbours, and whose houses are lower on the hill as well as nearer the flats, were comparatively free from the disease. The inference seems to us inevitable then, that the cause of the disease originated either in the earth, or the water, which belonged to the houses where the sick resided. That it was the earth and not the water, seems to us most probable, from general considerations, which we will not stop to discuss. But that it was the earth, is rendered still more probable from this circumstance, viz. that no cases of the disease occurred in the houses in Hartford-place, where the earth has recently been removed for several

feet from the surface in order to build those houses, although this place is in the square where the disease was most prevalent, and was very near to houses in which it prevailed. It is certainly not improbable that the safety of this place was owing to the removal of the old soil. The water there probably did not differ from the water in the neighbouring wells.

Whatever may be the peculiarity in the soil, which we have referred to, there is reason to believe that the agency of a certain degree of heat with a certain degree of moisture is necessary to bring into activity the poison, which it furnishes. It is only in summer and autumn, and only in certain years that it can be developed.”* “At the moment when the first distinctly marked cases occurred on the Hill, every investigation was made to trace them to a foreign source, but in vain. This investigation was prosecuted by persons of different opinions on the general question at issue, but with the same result.”† “And it is worthy of remark that in neither of our epidemics has any mode of foreign importation been pointed out, which rested even on plausible ground.”‡

* See New-England Journal for October 1819, on the late fever in Boston.

† Ibid.

‡ See North American Review, No. 27.

It was not until a month had elapsed after the first cases of this disease about Fort Hill, that the ship *Ten Brothers* arrived from Africa, by way of Martinico. She came up to the town of Boston on the 1st of August, having laid three or four days at quarantine. Neither the health officer or the captain suspected the existence of any disease in the vessel; she had been free from sickness for several months, and the captain received his wife, two sons, and his nephew on board at quarantine, and brought them with him to town. The vessel however underwent the usual purification at quarantine, and was then suffered to pass up to the town, notwithstanding it was "stated by people of veracity, that the ship was extremely foul, so as to be offensive to the senses, even when coming up the harbour, and of course before her cargo was started."*

"It does not appear that any examination was made of the state of the lower hold of the ship; and no part of the cargo was removed. Yet this cargo was in a state very far from healthful; and it was matter of common remark that no ship had arrived in our harbour for many years in so foul a state as the *Ten Brothers*. The interstices between her timbers were filled with corn and coffee,

* See New-England Journal.

in the most putrid state ; and the gunny bags and the coffee of her cargo were filled with insects.”* The ship “ while at sea and before her arrival on quarantine ground, leaked considerably, between two and three hundred strokes an hour ; after her arrival at quarantine, she did not leak much, but she was pumped out every night and morning while she lay there.”† “ The crew of said ship did not assist in unlading her at the wharf, but they all slept on board her, on Sunday night, when she first arrived at the wharf, and on that Sunday and Monday following, they were all taken sick and left the ship, three of them died during that week, after leaving Boston, and two recovered. On Wednesday after the said ship arrived at the wharf, and when unlading, a white scum was discovered on the bilge water in her lower hold, and an unusual stench from the water pumped out of her ; putrid corn was also discovered to be scattered in her timbers under her ceiling, but no information of these circumstances was communicated to the Board of Health for several days afterwards.‡”

The greater part of the persons who visited this ship received no injury. About twelve or fifteen

* North American Review for April, 1820.

† Report of the committee of the Board of Health of Boston.

‡ Ibid.

of those who went on board of her were attacked with a malignant fever, to almost all of whom it proved fatal, but in no instance did it seem to extend itself to the physicians, or to any of the persons in attendance upon the sick, nor does it appear that it occurred in a single person who had not been actually on board the vessel. On this subject the committee of the Board of Health remark that "it was early discovered, that although the disease was very malignant and fatal, yet it was not contagious; the committee have not been informed of a single case, where the disease originated from said ship, has been communicated by the diseased patient."*

Although these two distinct sources of fever have been carefully attended to by the physicians of Boston, yet no difference in the character of the disease has been discovered; in both instances it was allowed to be of local origin, and every case of the disease could be clearly traced to one or other of those causes. "From these two sources arose the disease which occasioned a considerable number of deaths, and gave so much alarm in Boston the last Summer. Many persons were on board the Ten Brothers soon after her arrival; and within a few days, several of them were at-

* Report of the committee of the Board of Health of Boston.

tacked with violent symptoms of fever, which to most of them in a short time proved fatal. These persons, as well as some of those who received the disease on Fort Hill, were sick in various parts of the town and in other towns, but they did not communicate the disease to others."* In a subsequent place the same writer remarks, "from all these circumstances, it is evident that the disease which arose from the ship Ten Brothers, was as purely local in its origin, as those upon Fort Hill. And as the cases from neither source possessed any contagious properties, so they could not themselves have arisen from contagion."†

It is particularly deserving of attention that the fever of Fort Hill occurred a month previous to the arrival of the ship Ten Brothers, was confined exclusively to a small spot of ground, and was not extended by personal communication with the sick; and, that the subsequent disease of the ship Ten Brothers was dispersed throughout the town in the persons of many of those who had contracted it on board of her, and that those persons did not furnish a single unequivocal instance of its being propagated by contagion.

With respect to the disease at Fort Hill it is stated by one of the most distinguished physicians

* See North American Review, No. 27, for April 1820.

† Ibid.

of Boston, that "the most remarkable circumstance about it was its tendency to a fatal termination. At such termination it arrived in the great majority of cases, and under different modes of treatment, although the disease presented various aspects at its commencement. Likewise, in most cases, death was preceded for some hours by a great failure, and sometimes an entire loss of the pulse at the wrist, while the patient felt easy and even comfortable, or else was comatose. Some cases were marked by severe rigors and great pain, with hard and full pulse; some by coma; some by black vomit; and in some instances all these symptoms occurred in the same case. Perfect stupor, resembling intoxication, great heaviness, with suffusion of the eyes, extreme restlessness, spontaneous hemorrhages, convulsions, and very irritable stomach with vomiting of bile, as also yellowness of the skin and of the tunica conjunctiva were occasionally noticed. Most of the fatal cases terminated on, or before the fifth day; but some persons, in the same vicinity, with the worst cases, died after a much longer time, one even in the seventh week of his disease. These longer cases and some of the shorter ones had at first no other characteristics than are common to our autumnal fevers; nor did every case show any others to the last."

"The strength of the poison producing the disease was shown more by its fatal effects, than by the violence of the first symptoms of the disease; at least, this is true in respect to many of the cases. In some persons therefore the disease was neglected as unimportant until fatal symptoms showed themselves. In others the attack was formidable and arrested instant attention." The number of cases of this disease which occurred in the town of Boston, from the two sources alluded to, is supposed to be about sixty.

Early in the month of July, reports were made to the Board of Health of Philadelphia, of a number of cases of malignant fever; the first five or six of which were traced to the influence of poisonous effluvia, arising from a large mass of putrefactive substances that had been accumulating before the doors, and in the cellars of the houses, occupied by the persons who were first attacked with the disease. On the removal of the nuisances, the extension of the fever was immediately arrested. It afterwards appeared in other parts of the city, and the local origin of it, was as clearly traced, in several instances, to uncleanness and foul air; and the spreading of the disease was as effectually prevented by the removal of the obnoxious materials. In regard to the first cases which were reported, it is stated that "the remote causes of these cases of malignant fever may be rationally

traced to the pestilential exhalations to which the subjects of them had been for some time exposed; derived from a collection of animal and vegetable matters which Reeves had been accumulating for several months before his door, to manure some land which he owned in New-Jersey; and from a quantity of decayed vegetables which he had under his house, and had been left there by the country people, who came to market; and from a similar mass in the cellar of William Wray, and a narrow alley running parallel with his house, and to the north of it." "Prompt measures were taken by the Board of Health to purify the houses. More than a cart load of an offensive collection was taken from Wray's cellar, and of putrid vegetables from under Reeves' house; and every part of both houses was well white-washed, the families were removed and kept away several weeks. The offensive alley north of their houses was washed by a fire engine."* Some of the cases which occurred in other parts of the city were also distinctly traced to similar causes. On examining a house in South Water-street, where three cases were reported to have occurred, both the house and yard "were found to be extremely filthy; three or four cart-loads of putrefactive sub-

* Vide American Medical Recorder.

stances were removed," and in another in Jones' Alley "two cart-loads of putrefactive substances were removed from the cellar."* The vigilance of the Board of Health in removing every cause of impurity, and guarding against the introduction of materials subject to decomposition, effectually arrested the progress of the fever, and soon extinguished it altogether. It does not appear that it was extended by contagion or personal communication with the sick; for although fifteen or twenty persons are supposed to have had the disease in different parts of the city, it entirely disappeared in the midst of the hot weather, under the measures of precaution and purification adopted by the Board of Health. A committee of that Board in reply to the inquiries, authorised by the Board of Health of New-York, respecting the malignant fever in Philadelphia, stated that "all the sick mentioned were resident in the city, and the disease has not been traced to any vessel or any stranger arriving from abroad in the place." This declaration must effectually defeat the insinuation, that it had arisen in Philadelphia in consequence of persons having frequently eluded the quarantine regulations of this port, and clandestinely entered the city of Philadelphia.

* Vide American Medical Recorder.

About five and twenty or thirty cases of the yellow fever, it is supposed, have occurred this season in two places of the city of Philadelphia, at the distance of several squares from each other—the first cases of it appeared in and about Water-street, near Race-street, and the remainder in the vicinity of Walnut-street wharf. We shall look to the physicians of Philadelphia with some solicitude for an account of the origin, nature, and extent of this fever; in the meantime we shall here insert an extract from the answer of the Board of Health of Philadelphia, dated August 17th, 1820, to a letter of the preceding day from the Board of Health of New-York. “There is one fact connected with the disease that exhibits clearly its local situation. A cooper and four of his associates went from a healthy neighbourhood, and worked one day on Walnut-street wharf. All five were taken ill a few days after with similar symptoms, but of different intensity. Mr. Brooks, the master, was ill one day only, two others were unwell two days, the remaining two are still unwell, though one is convalescent.

There is also, two very important circumstances in relation to the disease, and which inspires a well grounded hope that the measures we have adopted will prove effectual in arresting its further progress.

The first is, that every case that has occurred, is satisfactorily proven to have originated in the infected district, now barricaded up; the second, that no instance of the disease being communicated by the sick in other parts of the city, is known." In a report of the 15th September, the Board of Health of Philadelphia state that "they have delayed a public communication of the existence of malignant fever within the city, until it should be apparent to them that its character was not of that sporadic nature under which it frequently appears in seasons similar to the present."

Early in the month of July, 1819, a malignant fever made its appearance, principally among farmers, in the immediate vicinity of Baltimore, several of whom, it is said, had not been in the city for a month. They exhibited the worst forms of yellow fever, marked by black vomit and hemorrhages. Towards the close of this month several persons were taken sick at Smith's Dock, nearly two miles distant from the first place, to most of whom it proved fatal; these cases also were marked with black vomit and hemorrhages. The wharf at Smith's Dock is reported to be made of perishable materials, "faced with timber and then filled in with logs, and the various offals of a large city, with a thin stratum of gravel on the surface. In some instances, chips and shavings of wood

constitute the principal material." "Some of the stores on this wharf, have wet cellars, others planked over, with an interval of from one to two feet between the plank and the mud. This was the state of several of the stores, the tenants of which died. We think this circumstance especially worthy of being noted, because Bowley's Wharf, which was placed apparently under similar circumstances, and from which many persons died in the epidemic of 1800, was now healthy. This mortality, at that time, was attributed to the bad state of the cellars, in consequence of which, in most of the stores, they were filled up with fresh earth, and paved with bricks. There was but one case which occurred on this wharf during the Summer of 1819."* The condition of the adjoining wharf also was supposed to contribute largely to the deleterious effluvia of that neighbourhood. "This wharf is faced with timber, and for a distance of ten or twelve feet along its whole length, it is filled with mud dug from the neighbouring dock. The remainder of the wharf, which is large, is filled with shavings, dirt collected from the streets, &c."† This part of the city was also particularly offensive from the ex-

* Vide a paper by Dr. Revere in American Medical Recorder on the fever of Baltimore in 1819.

† Ibid.

istence of a variety of nuisances in the streets; which were removed by the Board of Health; and such other measures were taken, as were calculated to purify the air. By these means, together with the removal of most of the inhabitants from this quarter, the disease disappeared, and the public agitation had subsided for eight or ten days, when the disease again re-appeared, but in another and distant quarter, and with increased virulence. At this time it was that it appeared at "Fells Point in Wolfe-street. This street runs parallel to the water, and is artificially constructed. That part where the disease first discovered itself is unpaved; in fact it seems to have been almost exclusively formed of shavings without even a stratum of earth upon them." "Soon after the epidemic had begun to spread in this part of the town, about the 20th of August, in consequence of a very disagreeable odour arising from this mass of putrefying shavings, it was complained of as a nuisance, when the police ordered it to be covered with fresh earth. Three labourers, all of whom lived in a healthy part of the town, were employed with their carts for this purpose. In the course of a few days all these men were seized with the prevailing disease, and they all died."* The heat of the weather, which now became ex-

* Fever in Baltimore by Dr. Revere.

tremely oppressive, the habits of the people of this offensive district, which was the resort of sailors and their associates, and the exposed situation of the shipping to the concentrated effluvia of the place, soon caused the disease to spread, and with an alarming mortality, among the sailors and the inhabitants, while the remaining "four fifths of the city was at that time more healthy than it has been at the same season for several years."* Many instances occurred of persons being taken sick after only passing through, or going but for a short time into the infected district; and it was remarked that there was scarcely an instance of a person visiting that part of the city at night, without undergoing an attack of the disease, while during the day it might be visited with comparative impunity.

Dr. Reese observes, that "several Physicians who had been attending patients through the whole course of the fever, in the very centre of infection, in the day time, were exempted from the malady, but by visiting once in the night they became diseased."†

It has been remarked of epidemics, that they are usually more violent or fatal at the beginning, and that they become milder, by an apparent ex-

* Fever in Baltimore by Dr. Revere.

† Vide Observations on the Epidemic of 1819, in a part of Baltimore, by David M. Reese, M.D.

penditure of virulence towards their close; but this was not the case in Baltimore, except, in respect to the number of new cases.

Dr. Revere says, that "the severity of the disease was in no degree mitigated towards its termination, but on the contrary, its virulence was increased," and the Board of Health in their report of the 17th of October observe, that "the great transition in the weather, while it may have extinguished the source of disease, has operated fatally to the sick, and excited disease in those already predisposed, so as to indicate precaution against returning before the total cessation of cases, to want of which, some have already fallen victims, and many have suffered."

With regard to the nature of the epidemic, the faculty of medicine of Baltimore have unanimously declared, that no circumstance had occurred to excite a suspicion, that the disease was contagious. It has been already remarked, that it first appeared about two miles from the city, was altogether confined to a clay soil, and low swampy ground, abundantly productive of marsh miasmata, where intermittent and the various grades of bilious remittent fevers have always prevailed, and where, it is asserted by medical men, some cases of yellow fever occur almost every season, but which have never yet extended

beyond the marshy situations. Smith's wharf, where it next appeared, is at least two miles distant. There is but little intercourse between these two places, and no suspicion was entertained of the disease having been derived from the quarter where it first appeared. "Almost every individual who remained in this part of the city was affected by the disease." There were many instances of persons taking the disease at Smith's wharf, and being removed to other parts of the city, without in any instance communicating it to their friends, or their numerous attendants. So forcible was the evidence of its non-contagious character, that even popular opinion, slow as it is to acquiesce in the truth of a doctrine of this nature, ascribed it to the structure and filthy condition of the wharves where it prevailed. Nor did the inhabitants at Fells point where it next appeared, about a mile distant from the latter place, trace it to, or suspect that it was derived from Smith's wharf; for at Fell's point, the sources of deleterious miasmata were too palpable to escape even common observation. "Not only ware-houses were erected on new made land, filled up with these noxious materials, but whole streets of dwelling houses. This spot is annually subject to intermittent and remittent fevers. The very moment I am writing this, (last of Feb. 1820)

the weather having been uncommonly warm for a few days, intermittents begin to prevail."*

The District Medical society of Maryland, in their communication to the Common Council of Baltimore, observe that "the malignant fever, which prevailed at Smith's wharf, and at Fells point, in the summer of 1819, in the opinion of this society, is to be ascribed to the decomposition of vegetable matters. This opinion is supported by the following facts—The alley back of Smith's wharf has been filled up with dock mud, shavings, and other putrescent materials. The same remarks will apply to the construction of Smith's wharf generally, and also to those parts of the point where the fever first appeared. It is highly probable that the logs composing the wharves in many places have contributed by their decomposition, to the production of the noxious cause. It is notorious to all who have made any observations on this subject, that the disease raged with more violence along the course of the wharves, and the made ground in their vicinity, than in places remote. A recent inspection of Kerr's wharf, and other wharves, has discovered, that from the decay of the facings of the wharf,

* Vide Account of the Fever, &c. in Baltimore in 1819, by J. Revere, M.D. in American Medical Recorder for April, 1820.

the water has been admitted so as to have formed subterraneous pools. These may have found communications with the cellars in the made ground in the vicinity, and may have penetrated to the piles constituting the foundation of the neighbouring houses, and thus have been led up into cellars, which may be the deposits of various putrescible articles. The immense mass of materials just adverted to, are buried from the eye of a superficial observer. These materials have existed, and others have been accumulating for many years. Why have they remained so long dormant? so long innoxious? While the heat of our summer remained moderate, the destructive principle was only partially evolved; but when the intense heat of the last summer penetrated the apparently inoffensive earthy covering, and reached the subjacent mass of perishable materials, they were subjected to a temperature to which they were unaccustomed, a temperature which gave origin to the cause of the disease." This respectable association further add, that "the doctrine of contagion and importation receive no countenance from this society."

A large number of patients in all the different stages of yellow fever, were admitted into the hospital, without exciting a suspicion of contagion. "Such was the conviction of its non-contagious nature, not only in the minds of the

faculty, but the other citizens, that the hospital was thronged, particularly on Sundays, by people, some of whom came to visit their friends, and many who came merely to witness the effects of a disease which had excited so much horror.”*

And Dr. Reese† in his observations on the epidemic of 1819 at Baltimore, in adverting to the above facts, remarks, “yet in no instance was a physician, nurse, attendant, or any visiter diseased;” and in speaking of the extent of the tainted district says, that “it was as easy to separate the healthy from the diseased portion of the point, as it would be to stretch a line across a room, so circumscribed was the extent of the noxious poison.”

Many hundreds of the poor were induced to leave the unhealthy district, and to repair to the neighbouring rope-walks, which were prepared for their reception; and when these became occupied so as to preclude the admission of more, tents were pitched in the vicinity. Here it is supposed that more than a thousand persons were furnished with subsistence, consequently they must have been of that description of people,

* Vide Dr. Revere's Account of the Epidemic of Baltimore in 1819, in American Medical Recorder.

† Observations on the Epidemic of 1819, &c. by David M. Reese, M.D. Baltimore.

among whom, disease is very apt to be engendered, and where contagion, if it existed, would spread with the utmost rapidity. It does not however appear, that a single instance occurred of its spreading in this manner. Dr. Reese observes, that "the health of the inhabitants of the encampment was truly remarkable; for during the whole time of their continuance in the ropewalks, only six persons died there; five others who contracted the disease at the point, but became affected after their removal to the encampment, were carried to the hospital, and died there, making in all only eleven deaths in the whole number who were collected from the diseased district."

It was not considered safe to return to the infected district until near the beginning of November. We have no means of determining the precise number of cases which occurred during the prevalence of the epidemic, as the physicians, unwilling to excite public alarm, reported only the more aggravated cases. From the account of Dr. Revere, it appears that "from the 1st to the 30th September inclusive, besides other diseases, there were six hundred and forty cases of yellow fever reported to the Board of Health, of whom two hundred and forty-two died. The following facts, which are selected from a great number possessing nearly the same common cha-

racter, will show to what an extent the atmosphere of this part of the city was at one time impregnated with the specific cause of yellow fever. The ship *Ceres* sailed for Liverpool on the 25th September; among the passengers were a gentleman, his wife and daughter; the latter a very interesting young lady about twenty years of age, who had lived in a very healthy spot, in the westerly part of the city, rode to Wirgman's wharf for the purpose of embarking. The ship was already under way, and the boat waiting expressly for her. She only waited to get from the carriage to the boat, and was then rowed off. This was the only time she had been at the point during the prevalence of the fever. The third day after she sailed, she was seized with the usual symptoms of yellow fever, and died with black vomit, hemorrhage, &c. There were several others who died in this ship, but they had been frequently in the unhealthy part of the town."

In concluding this part of our paper, we cannot refrain from inserting the very excellent description of some of the forms of yellow fever in the words of Dr. Revere. "The symptoms by which this disease was characterised, varied very essentially in different individuals; nor could this be satisfactorily accounted for from the constitution of the patient, or the circumstances under which he was placed. Sometimes the first signs

were pain in the head, back, and limbs, and an inflamed appearance of the eye. At others the disease was ushered in by a severe cold fit, which would continue for several hours; this would be succeeded by a violent fever, in which the headache and pains in the back and limbs would be excessive, the skin hot and burning, the countenance deeply suffused with blood, and the pulse hard and bounding. The fever would often continue without any intermission, and sometimes without any perceptible remission until the fifth or seventh day, when the pulse would sink, the surface become cold, deadly nausea would take place, followed by coffee ground vomiting, hemorrhage, and death. The yellowness of the skin often came on in this stage of the disease, and was sometimes of so deep a hue, as to approach a black. In other instances, nearly the reverse of this would take place. In the early stages of the disease, there would be slight headache and pain in the back, attended with great prostration of muscular strength, preternatural coldness, and clamminess of the surface, and sunken pulse. In some instances, these symptoms proceeded to such an extent, that the powers of life were completely prostrated, and the patient died in a few hours. In one case a sailor was walking the deck without any complaint; he suddenly fell down. When the physician who was

immediately sent for, arrived, the senses remained, and the respiration continued, but the pulsation had ceased at the wrists, the face was hippocratic, and the man died almost immediately. If the patient did not die in this stage, which was often the case, on the second or third day reaction would take place, and the state of the system would be completely reversed. The pulse would rise, the skin became hot, and repeated venesection became necessary. In some instances, there would be neither in the complaints of the patient, or other symptoms, any thing which would lead one to suppose that any alarming morbid affection existed, yet the patient would tell with astonishing precision, the hour, and almost minute, when he was seized; and such cases frequently terminated fatally. In one instance, the patient was in a quiet refreshing sleep, the skin cool, and the pulse not seeming to indicate danger. The patient being roused and questioned, answered rationally, that he had been seized at a certain hour two days before, with headach and slight indisposition, but that he was now free from any complaint, excepting he was rather sleepy. Yet this man was passing his fæces and urine involuntarily, and died comatose within twelve hours. In other cases, a train of symptoms so entirely opposite would ensue, that one could hardly recognize the most remote resemblance in a single feature

of the disease; e. g. a man walked out to the hospital, a distance of more than a mile, and after he was left there by his friends, insisted that he had not a complaint. But he was delirious when he arrived, and soon became so troublesome that it was necessary to apply the straight waist-coat, which it was not found prudent to remove until within a short time before his death, which happened within thirty hours after he was admitted. The bowels were generally sluggish, but by no means insensible to the operation of cathartic medicine. There were no distinct remissions or exacerbations of fever. After the first attack there was generally an uninterrupted febrile state, until a complete intermission took place. This was sometimes the case at the end of twenty-four hours, but at others it continued for four or five days. In many instances the sensations of the patient were in a very remarkable degree disordered. The skin would feel cool to a by-stander, while the patient complained of a distressing sensation of heat, and vice versa. In almost every case the patient complained of heat and pain about the scrobiculus cordis, attended with such extreme sensibility, that the slightest pressure occasioned acute pain. This preternatural sensibility sometimes extended over the whole surface of the body, so that in one instance the patient, a man, complained seriously of the

pain caused by the pressure of the finger of the physician on the wrist, in feeling the pulse.

In those parts which had undergone the process of vesication, the soreness and pain was most exquisite. I saw a sailor on whom the common pains of the body would have made no impression, absolutely weep from the pain he endured in dressing his blister. Hemorrhages were most frequently from the mouth. The blood did not seem to be poured out from any spot, but to ooze from the whole internal surface of the mouth and gums. Bleeding sometimes took place from the nose, ears, stomach and bowels, and in one case from the eyes. The blood was sometimes discharged in large quantities, particularly from the bowels, attended with tenesmus. Hemorrhage was always an alarming symptom, but not necessarily fatal. In one instance there was hemorrhage from the nose, ears and stomach, preceded by black vomit, yet the patient, a boy, recovered. Black vomit took place generally on the fifth or seventh day, and was a most dangerous symptom. It was sometimes however the first symptom of the disease, as in the following case: a boy had fallen into the hold of a ship, by which both the thigh bones were fractured. The bones had united and the boy was comparatively well. Soon after eating his breakfast, in apparent health, he was seized with deadly nausea, which terminated

in black vomit; he died on the fourth day. After the beginning of October, as has been already stated, the number of new cases and deaths essentially diminished, yet in those who were seized after this time, the disease was still more malignant and fatal than at its commencement. One gentleman assured me, that of the twenty-three last cases which were under his care, nineteen died in the following manner; after two or three days of smart fever, a complete intermission would take place, the patient would seem convalescent, his appetite would return, and every thing appear most flattering; when suddenly, and without any apparent reason, he would be seized with nausea, or rather a most distressing sensation of weight about the pit of the stomach, soon after which, black vomit, or hemorrhage would ensue, which were the harbingers of death."

A similar epidemic also appeared in Charleston, South Carolina. We regret not being able to mark the period of its commencement. The number of deaths which it caused was about one hundred and eighty, it was less fatal than in 1817. The following brief and distinct account of it has been obligingly communicated by that very intelligent physician, Dr. J. M. Campbell—he observes "that it is the same disease which has occurred here in previous seasons, and is known and distinguished by the name of yellow or stran-

gers' fever. The universal impression is that it arises entirely from local causes;—that a state of atmosphere capable of producing it prevails to a certain degree every summer, and that the disease is always extensive when the early part of the season is very wet, followed by great heat of weather. It makes its appearance in the neighbourhood of the wharves and confined parts of the city, after which it extends itself without following any particular tract. The subjects of it are strangers and children, there being no instance of a native adult having the disease, unless he shall have estranged his constitution by several years absence. It appears necessary to live in the yellow fever atmosphere to be exempt, for persons who reside but a short distance from the city are liable to the disease on coming into town. Europeans and northern men have the fever in a more violent degree, and the chances of recovery are less, than in those accustomed to a warm climate. Strangers who go to Sullivan's Island as the only place of security are perfectly exempt, although many of them are in crowded boarding houses, and nurse, without fear or injury, those who have contracted the disease by staying too long in Charleston previously to their retiring to the Island. A severe frost always puts an end to the disease, while cool weather increases it. In the commencement of the season the recoveries are less frequent

than at the close. The symptoms of this disease correspond with what is related by medical writers. The two symptoms which most universally prevail, and which may in some measure be considered as characteristic of the disease, are a peculiar pain and burning at the pit of the stomach, and the evacuations of a dark greenish colour, having particles of the same colour swimming on the top. The absence of bile from the evacuations has been noticed as a very unfavourable symptom." "Dr. Shecut in his essay on the yellow fever of 1817, has added to the title page the following, "Let it be remembered, that the yellow fever, which is the subject of this essay, is that which is the proper endemic of the city of Charleston."

It was matter of common observation, that the country generally, for some distance from Charleston, was unusually sickly during the summer and autumn of 1819. Dr. Irvine, in his treatise on the yellow fever of that season, states that, in the course of twenty years experience, he has invariably noticed the great prevalence of disease, or the occurrence of violent forms of fever, in the country at large, at those periods, when the yellow fever has appeared in the city of Charleston; and that the latter, has been proportioned to the extent or severity of the diseases of those seasons throughout the country. With respect to the

origin of the yellow fever he observes, "It is easy to perceive, that if to an atmosphere, which has already, from various causes, become so deleterious, as to occasion general unhealthiness, be superadded, all those effluvia which from foul streets, sewers, &c. are constantly contaminating the air of cities, a malignant disease must necessarily be produced; and accordingly under such circumstances, the yellow fever has invariably broken out, with greater or less violence, in proportion to the sickliness of the country, or season generally."*

The difference of the type of the fever of the town and country, he supposes to be owing to a difference of local circumstances, the latter being referable to a marshy and vegetable origin, while the former, is aggravated and changed by the addition of animal effluvia connected with the situation of the place, and the density of its population. Dr. Irvine is an able advocate of the domestic origin of yellow fever, but believes that it never occurs, excepting in those situations which are exposed to the influence of tide water. We shall not advert to the frequent instances of the yellow fever having appeared on board of vessels at sea, and at many places in the Mediterranean not subjected to the influence of the tides—it is only

* See Irvine's treatise on the yellow fever of Charleston of 1819.

necessary to look to the banks of the Mississippi, for a refutation of this opinion. He asserts that Charleston has always been healthy "when the country around it has continued free from any remarkable mortality;" and that in such seasons a person from Europe may safely pass the summer in that city. Children from the age of one to twelve years, are equally with strangers, exposed to the disease, and they can only obtain security against it, if they remain there, by passing through what is denominated, a yellow fever season. Dr. Irvine thinks "that there is some quality in the air in the neighbourhood of the sea, and of its tide waters, which is necessary to the spread and action of the infection;" and that a season *generally sickly is especially* necessary to its appearance.

"I have mentioned that the effluvia arising from the concentrated population of a city, are not sufficient of themselves, to create the latter disease, (yellow fever) and that it is only when they come in contact with an unusual mass of miasmata in the general atmosphere, that the yellow fever is produced. That therefore the country must be unhealthy before the town becomes so. When the great body of the air is loaded with those deleterious exhalations which occasion bilious remittents, the superaddition of the various noxious emanations proceeding from an ill-cleansed city, necessa-

rily engenders a malignant disease."* Contending altogether for the local origin and non-contagious nature of the yellow fever, he advocates all those improvements which are calculated to purify the air, and cleanse the surface of the town; such as paving the streets, filling up their inequalities and altering them so that by means of side drains, running on the surface of the ground to the waters edge, all offensive collections may be carried off by the descent and washing of the streets. He particularly condemns the present subterraneous sewers, being covered with grates through which their effluvia pass, and also frequently opened and their contents strewed on the surface, "from which they are never removed, so that the soil of our streets becomes a compost of every thing deleterious." He likewise condemns the "present custom of digging subterraneous cellars, which become receptacles for foul air, and often from springs or rains, form bodies of stagnant water. The ground on which our city stands, is of *too low and springy* a nature, to admit of these constructions."

Dr. Irvine is of opinion that persons in the climate of Charleston "can never have the disease but once," an opinion which the sad experience

* See Irvine's treatise on the yellow fever.

of many persons in this and other cities of the United States has already abundantly refuted. He observes, however, "that strangers are frequently seized in the early part of the season, with bilious remitting and intermitting fevers, and though when they recover from these, they are less likely to have the yellow fever, they are still liable to take it, by improper exposure or excitement of the system." He doubts if a second attack of yellow fever ever took place in an adult, and believes that when this has been supposed to occur, the bilious remittent has been mistaken for the yellow fever, and consequently that these two diseases are perfectly distinct. The latter he believes to consist of but one paroxysm, having no remissions or intermissions, and never terminating by perspiration or critical discharges. We have noticed these opinions of Dr. Irvine, because we believe them to be somewhat peculiar for an advocate "of the domestic ingeneration of yellow fever" to entertain. It has heretofore been the privilege of the contagionists alone, when at a loss to explain away the embarrassments of their doctrine, to refer them all to a mistake in regard to the disease itself.

Dr. Irvine has taken a view of the disease, which we cannot help believing to be extremely imperfect, nor can we forbear pointing out the insufficiency, we had almost said, the entire want

of proof of some of his pathological opinions. In the first place, we are compelled to notice the fallacy of his reasoning. From the useful researches of Dr. Physic, which have *pointed* to the true nature of the matter of black vomit, Dr. Irvine argues, that the yellow fever is a totally distinct disease from bilious fever. This, however, is a sweeping and gratuitous assumption, resting upon the explanation of a single symptom, frequently ascribed to the presence of bilious matter in the stomach ; but which according to experiments and the dissections of Dr. Physic, is probably owing to a morbid derangement of function in the extreme bloodvessels of the stomach and intestines ; or to an effusion of blood, changed by its combination with the natural and vitiated contents of those cavities. If this fact were established, it surely would not determine the true nature of the disease. By parity of reasoning, we might as fairly infer, that jaundice was not an hepatic affection, and the yellowness of the skin was not owing to bile, because the dejections indicate the absence of that fluid. Nor was it necessary that the matter of black vomit should be found in the liver or gall bladder, to prove the connexion of that symptom with the liver : nor does it follow, because no fluid could be obtained by an artificial combination out of the stomach resembling that of black vomit, that it could not

be produced in the living stomach, and in connexion too with the presence of bile in that organ, and be so acted upon by the gastric juice, and the functions of vitality, as to elude all the ordinary tests of bile. Is it not allowed that when vomiting occurs early in the disease, or when emetics are promptly administered, that large quantities of bilious matter, and frequently pure bile is thrown off? is it a satisfactory explanation of this phenomenon, that it is solely and necessarily caused by the violent efforts to vomit, emulging the biliary vessels? Why then does not bile appear in the matter of black vomit, since it can so easily find its way into the stomach on the first vomiting? If the bilious matter, which "is probably always more or less accumulated in the first passages,"* is not removed by early vomiting, but remains in the stomach and bowels for a few days, until the accession of the symptom of black vomit, why does it elude the ordinary tests of bile, and escape detection under the character of the matter of black vomit?

But admitting, for the sake of the argument, as we are disposed to do from belief, that the coffee coloured matter of black vomit, is not composed of bile, does it prove that the bile or liver, has

* See Irvine's Treatise on the Yellow Fever of Charleston.

nothing to do with the yellow fever? Are not some of the most strongly marked bilious affections, associated with a perverted, or suspended condition of the natural function of the liver? and does not the congested state of that organ, sometimes so far transcend the excitement necessary to an increased secretion of bile, that little or no secretion of that fluid takes place, and the liver is found after death to be of a pale or other unnatural colour, analogous to what has been often observed in diseases of the kidneys; and what is also frequently remarked of a number of febrile affections, in which the function of perspiration is completely suspended? Could we legitimately infer because perspiration is altogether wanting in the latter affections, that they never have any connexion with the functions of the skin; and will not the entire suspension of all the secretions, which is said to be observed in yellow fever, from the suddenness of their occurrence, account for the various congestions which seem to take place in that disease?

Do not all the symptoms warrant us in the belief that it is often a disease of congestion, accompanied by its corresponding degree of excitement, sometimes rising far above, and at other times sinking much below, the ordinary excitement of health, and bringing different parts of the system into associate and corresponding

states of congestion? Does not an extraordinary degree of muscular energy take place sometimes from the irritation and excitement of the brain; and at other times a prostration of the powers of life, and a state of extreme collapse of the system, from the violent operation of the same cause; and have not these, and similar effects, been observed in connexion with slight organic affection, or mere derangement of the function of the liver? Has not death ensued after all the symptoms of hepatic cholic, and the liver been found on examination to be free from any diseased structure, and to have been merely disturbed in its function? But whatever may be the cause of this symptom, it is not necessary that it should be owing to bile, to confirm the doctrine of yellow fever being a bilious complaint, or an aggravated form of bilious remittent fever; and if it were owing to bile, still it must oftentimes be absent, since there is a very large proportion of cases, in which, this symptom has never occurred.

We cannot subscribe to the doctrinal language which treats of the "matter of black vomit, as well as the dark matters dejected from the bowels," as "*secretions* from the inflamed blood-vessels of the stomach and intestines." Too little is known of the nature of secretion to authorise the frequent comparisons of such morbid effects, with the functions of health. We may

imagine the existence of a morbid *sanguineous secretion* in the stomach, or to speak more correctly, of such engorgement and relaxation of the vessels, as may allow of effusions of blood, which may colour the discharges from the stomach and intestines ; and that something analogous to it may exist in large portions of the sanguiferous system ; and from its effect on the small vessels of the surface, give rise to hemorrhages, petechiæ, and to a dark, dirty and yellow colour of the skin. But, that the deep shades of yellow, which so often occur over the whole surface of yellow fever patients, with the similar suffusion of the eyes, is altogether owing to the same cause, is not in our opinion so satisfactorily established, as Dr. Irvine appears to believe.

Is not the yellow colour of the skin in icteric affections, oftentimes ascribed to slight functional derangement of the liver, produced by ardent spirits, violent exercise, hot weather, the depressing passions of the mind, and by anger, and jealousy ; or supposed to arise from obstructions of the gall duct by calculus, inspissated bile, tumors, spasms, and a variety of dyspeptic affections, which have turned the course of the bile from the bowels, to the surface of the body ? and is it not probable, that when the secretion of the liver is suspended, and the passage of certain matters from the system through that organ is

obstructed, that these matters may seek their exit through the skin and the kidneys, where they may, and in yellow fever do actually, meet with a corresponding state of suspended secretion? and if the pyloric orifice of the stomach has been found closed in yellow fever independent of organic, or mechanical obstruction, may not a similar contraction of the gall duct occur from the influence of the same, or some other latent cause, and occasion the yellow appearance of the skin without any structural disease of the liver and its appendages, or any unusual appearance of the bile? The fact, therefore, of the dissections which have been made of some yellow fever subjects, not having discovered any thing unusual in the hepatic system, does not warrant us in the conclusion, that the secretion of bile, or the function of the liver, has nothing to do with the production of any of the symptoms of yellow fever. Suspended secretion of bile we believe is oftentimes attendant upon, and perhaps productive of the most severe and dangerous forms of disease. The presence of that peculiar factor which is supposed to be derived from the liver, has long been noted as a favourable symptom, and the appearance of bile in the dejections of the sick, under a variety of diseases, is frequently the first symptom of improvement. In the yellow fever, it has been often and particularly observed, that the

want of bile in the discharges from the primæ viæ is unfavourable, and the same remark is applicable to bilious remittent fever.

That the force of the disease occasionally appears in the bloodvessels, will be conceded by all who have any acquaintance with the principles and practice of Dr. Rush; but, that it does so always, cannot be reconciled with the knowledge of the fact, that frequently great prostration of strength is observed, while at other times there is a striking continuance of muscular energy, until the close almost of life; and again, there appears an extreme disturbance of the brain exclusively, or a natural state of the pulse, and a general sensation of returning health, a few hours only before death. The sudden invasion of black vomit at the moment of convalescence, as seemingly indicated by the pulse, and general feelings of the patient, is also opposed to the theory "that the whole onus of the disease falls exclusively on the vascular system;" and that a "morbid secreting action" of "the entire mass of the smaller arteries and bloodvessels" is going on through the system, and constitutes the essence of the disease.

The symptom, however, upon which Dr. Irvine rests principally, in contending for the distinctive character of yellow fever, is the great irritability of the stomach. This is a symptom common to so many diseases, that we

are at a loss to know how it can be so peculiar to yellow fever, as to "constitute a sufficiently broad line of demarkation between the respective diseases;"* for our own part, we think the redness and expression of the eye, and the countenance generally, the most striking feature of the disease; but neither this, nor any other symptom, or series of symptoms, is pathognomonic of yellow fever, as distinguishable from bilious remittent fever; indeed the *importers* themselves admit the impossibility of distinguishing it from the aggravated form of bilious remittent, and have referred the difference altogether to the principle of contagion appertaining to the one, and not to the other. Moreover, the irritability of the stomach in yellow fever at first, is not greater than in many other instances of disease; for we frequently observe patients taking, and retaining on the stomach, very large quantities of drink, swallowing repeated doses of calomel and jalap, salts, boneset-tea, and castor oil, and a variety of other articles, equally, or nearly as disagreeable. Besides an extremely delicate and irritable state of the stomach, is as uniform a symptom in the severer forms of bilious remittent fever, as it is in yellow fever, and is removed by the same means, which are employed

* See Dr. Irvine's Treatise on the Yellow Fever of Charleston.

for its removal in yellow fever; indeed the identical remedy which is so highly recommended by Dr. Irvine, has been frequently employed by physicians in the western states, and for the express purpose of removing this extreme degree of irritability of stomach, occurring in the ordinary bilious remittent fevers in the country. From these, and a variety of other considerations, suggested by reason and experience, we are unable to yield our assent to the doctrine, that the yellow fever is never a bilious disease. On the contrary, we know that dissections of persons who have died of yellow fever, have discovered the stomach and duodenum inflamed or gangrenous, and the smaller intestines sometimes in a state of disease, and that the liver has been frequently found enlarged, inflamed, and altered in its colour, and the gall-bladder and ducts exhibiting a dark viscid, and very unnatural state of the biliary secretion. We believe that the stomach is oftentimes only the *seat of the sensation of uneasiness*, complained of in the yellow fever, while the cause of it perhaps is to be found in the hepatic system; and that the subsequent appearances of the stomach, are not unfrequently the effect of morbid association, occurring with all the rapidity which characterizes the march of this disease.

We shall finish this part of the subject with an extract from Dr. Irvine's pamphlet containing a detailed account of the symptoms of this fever, as it appeared in Charleston.

The time of the attack he states "is generally just before day break, at the period when the collapse of sleep is probably most complete. The seizures which occur thus early, I have observed to be usually more severe, and are more apt to terminate fatally, than such as take place in the forenoon, for persons are rarely attacked at any other than these periods, in the twenty-four hours. In the first instance the patient often awakes in violent tormina, affecting the stomach and bowels, which seems to suspend or put off the febrile action, for it is not until the decline of the pain that the fever commences. In common, however, the symptoms are such as have often been described; namely a sense of lassitude with pain of the head, back and limbs, accompanied by *nausea*, and uneasiness of the stomach. The fever sometimes immediately succeeds these affections, at others, it is ushered in by an obscure chill or slight rigor. The arterial action is considerable, attended by a parched state of the skin, with flushing of the face, and redness of the eyes—the last however is not an invariable symptom. The pulse is in most cases tense and strong, but in a

few instances, irregular and oppressed, while the tongue continues clean and gummy, being very seldom foul, or covered with a white furr. The patient always complains of great oppression of the præcordia, and is exceedingly dispirited, sighs much, and is often affected with slight delirium or wanderings of intellect. These symptoms are followed by frequent retchings, and the discharge of various foul matters from the stomach, the chief of which seems to be a bilious saburra, which is probably always more or less accumulated in the first passages. In these vomitions, pure bile is sometimes thrown up, but which, as has been shown, has nothing to do with the disease, being caused altogether by the violence of the efforts to vomit, which has the effect of emulging the biliary ducts, as often happens in cases of common sickness. Flatulence is another distressing symptom, which seems to be confined wholly to the stomach, and though the patient appears to be often on the point of getting rid of it by eructation, a regurgitation to the stomach takes place, and this wind or gastric gas thus continues to undulate, creating great distress and restlessness. The paroxysm seldom extends beyond thirty-six hours, though it may be protracted to forty, in a few instances. Its subsidence, which is never marked by any critical or perspiratory discharge, is succeeded by a remarkable quies-

cence, and in fact collapse of the whole system. The pulse becomes equable and natural, the skin relaxed and cold, the intellect clears up, and the patient appears to be doing well. There is sometimes, however, at this period of the complaint, a stupor, which is always a symptom of great danger—Another bad sign is a morbid irritability of the stomach, manifested by a renewal of the efforts to vomit whenever pressure is made by the hand on that organ. It is also a very unfavourable symptom, when the patient expresses an opinion that he is well, or that very little is the matter with him. The last and most fatal effects of the disease, are an increased debility and prostration of strength, a sinking of the pulse, and an exacerbation of the irritability, pain, and heat of the stomach, followed by incessant strainings to vomit and repeated discharges of the black vomit, or stuff resembling coffee grounds, with a dejection of similar dark matters from the bowels. The urine at this time becomes dark and fetid, the yellow suffusion with petechiæ make their appearance, and hemorrhages from the fauces, nostrils, and other external surfaces take place. Finally, the pulse intermits, the breathing becomes laborious, the extremities gradually grow cold, and life ceases. The symptoms here detailed, are not, it is to be observed, invariable either in order or occurrence. Patients often die without either the hemorrhages, black vomit, or yel-

lowness of the skin. The last mentioned peculiarity sometimes shows itself immediately on the decline of the fever, and may always be regarded as a certain precursor of the formation of the black vomit. In the early part of the season, the cases usually terminated on the fourth day, (reckoning always the natural day of twenty-four hours.) As the season advances, they extend themselves to the sixth day, when the worst symptoms appear on the fifth. Towards the end of the summer, the disease is sometimes protracted to the eighth and thirteenth days; during this long collapse, the patient generally remains perfectly quiet, though very much prostrated, except where injudicious attendants tamper with the stomach, by improper administrations, and bring on the vomiting and other afflicting symptoms.

Although, as I have before observed, this disease is dissimilar from every other whatever, it is yet susceptible of a certain degree of modification, as we have a *subgrade* of it, which in a majority of cases, eventuates favourably on the third day, by perspiration, and is never accompanied by the black vomit, hemorrhages, or any of the more violent symptoms. This mild form of the fever, is capable however of being exasperated into a serious disease, by improper treatment, particularly by the administration of *mercury*, which being an excitant of secretion, brings on all the fatal

affections which characterise the higher grade of the fever."

At this time also a disease appeared at Savannah, which, like that of Charleston, was confined principally to strangers and children. In the course of the disease, we learn that, symptoms occurred resembling those which arise from taking "an over dose of arsenic, or any other deadly substance"* into the stomach—nearly three hundred cases of it occurred in the single month of October; comparatively few of the native adults were affected by it; during the last two weeks of September, there were one hundred and sixty three cases—thirty-four of which occurred among the resident citizens, and of the thirty-two deaths reported for the same period, thirty-one occurred among foreigners;† its mortality among the fluctuating population, foreigners and new residents, was unusually great, and may be judged of from the report of the Medical Society of that place, in which we find that "the Irish people that have come here at different times during the season have been almost entirely swept away; and in relation to them, the mortality has been parallel with a plague in Egypt." The climate is said

* Vide report of the Medical Society of Savannah.

† Ibid.

to have operated on Europeans like a poison, and the report adds that "the type of the disease was conspicuously bilious." A very destructive fever of the same character appeared in this place in the summer and autumn of 1817, which was then, and has since been said, to be the yellow fever. The Mayor of Savannah, however, declared by proclamation that the yellow fever did not exist there during the last season, and in consequence of it, that place enjoyed all the advantages of commercial intercourse with the northern cities; while the vessels from Charleston, where the same kind of fever prevailed, but, was not as fatal, were compelled to submit to the expense, delay, &c. of a rigid quarantine.*

We have no means of ascertaining the number of cases which occurred during the prevalence of the epidemic, or the number of deaths which it caused. It does not appear to have been considered contagious, but like the yellow fever of the West Indies, is viewed as the offspring of a hot climate, operating on the soil and the vegetable and other substances necessarily accumulating in a populous town. It is to be hoped that some of the medical gentlemen of Savannah will furnish an account of the epidemic which appeared there in 1819. A disease of a similar character,

* See Charleston Courier November 8th, 1819.

is at this time, we are informed, prevalent in that city.

We have to notice next a similar disease which prevailed at Mobile during the summer and autumn of 1819. There is little reason to doubt its having been one of the most violent forms of yellow fever. We regret that we have not yet received any account of its symptoms and treatment. A short time after the subsidence of the fever, seven of the inhabitants, the greater part of whom had remained in town during its continuance, were appointed "to investigate the causes and extent of the late extraordinary sickness and mortality." From the report of that committee, we learn that "in its type and symptoms, it seems to have exhibited no peculiar characteristic marks or effects to distinguish it from the yellow fever of other seasons and places, as described by physicians, unless it be the greater mortality which attended it;" and that they believe it to be justly attributable to a variety of local causes, under the influence of a most unusual season. The committee remark, that "the season has been a very uncommon one, and has produced uncommon effects, and wherever it has operated upon local causes, it appears to have produced malignant fevers." "Some remarks upon the general state of the country around, in regard to sickness or health, being intimately connected

with this subject, as influenced by general and common causes, may not be deemed improper. At New-Orleans, Baton Rouge, Natchez, and perhaps generally upon the Mississippi, as high as the latter place, the same species of fever seems to have prevailed with great mortality. Natchez and New-Orleans, it is understood, have suffered beyond any former examples. In the interior of the country, upon the waters of the Tombecbe and Alabama, the sickness and mortality was greater than was ever known before. At St. Stephens, Jackson, Fort Claiborne, and other places on those rivers, bilious fevers of the worst grade prevailed; and in many instances we are warranted in saying, that in type and symptoms, it differed little from the fever which prevailed in this town" where they observe "art and labour could scarcely have combined a more destructive mass, for the production of malignant fever, under the operation of such a season, than is found to have been laboriously collected together in filling up lots, streets, and wharves." "June and July were uniformly hot, greatest heat 92 degrees. The storm of July terminated a long drought, and deluged the whole country around; all the lesser rivers and creeks overflowed their banks to the height of winter floods. From the 28th July to the 11th September, it rained without a day's intermission; and often descended in torrents. All the neighbouring swamps and low grounds about

the town, were filled with water to a height unexampled at that season of the year. The sun at times burst forth with sultry, suffocating heat. The brick walls, houses, furniture, books, and clothing, all became mouldy, and the latter required frequent sunning to preserve them from destruction."

From the description given by the committee of the general state of the city, and particularly of the structure and condition of some of the wharves and streets, we cannot entertain a doubt of the local origin of this disease. One vessel only arrived from the West Indies, and that, not until after the middle of August; several weeks prior to this time, a number of cases of the most malignant type had appeared; we must however, in the first place notice the local causes of disease enumerated by the committee, who in speaking of the wharves, report, that they are "built with hewn timber, closely laid, confining the water within the outward dimensions of the wharves, and filled up with rotten logs, bushes, shavings, and other vegetable matter, covered lightly with swamp mud or earth, presenting to view an immense mass, in the most noxious state of decay. Two of these wharves, about 450 feet in length, and 30 to 40 in breadth, were commenced in the spring, and the work of filling them up with logs, mud, and bushes was carried on during the summer, till the storm on the 28th July, and the sick-

ness of the workmen put a stop to it. They were however nearly filled up to the length and breadth mentioned, and to the depth of from four to ten feet, and the surface of about a third part, covered with pieces of swamp marsh, cut in convenient sizes for the purpose, and marsh mud. When the committee viewed these wharves, the sight was most disgusting, and the smell so offensive, that they felt their health endangered by delaying about them."

The other wharves, five in number, also deserve a more particular notice. Three of them appear to be built upon the plan of the former; and with like materials, two are partly built upon piers, giving a more wholesome circulation to the water. One was built during the spring and summer, but chiefly destroyed by the storm of July; the others from one to four years since, each of them affording a mass of decaying vegetable matter, from two hundred to four hundred feet in length, twenty-five to thirty in breadth, and three to ten in depth, covered with a thin layer of earth, or mud. Water-street is also observed to be filled up with the same kind of materials, in many places to the depth of from four to six feet, and computed together, might afford a mass of such matter, several hundred feet in length, and fifty in breadth, thinly covered with earth. The lots adjoining this street, on one side,

are found to have been chiefly filled up with rotten logs, green-pine sapplings, and pine tops, with a thin layer of earth, and might comprise more than an acre of ground, thus filled from one to two feet; and on the water side, the docks are observed to have been much clogged up with timber, and drift logs, and old boats, which, during the low summer tides and north wind, collected together in the docks, great quantities of sea weed, and other filthy matter in a state of decay, particularly under the stores standing over the water.

The badly constructed foundations of the stores and buildings near the river, retaining beneath them much unwholesome matter or stagnant water, affecting the inhabitants with their deleterious damps and effluvia, must have proved a fertile source of disease under the influence of the late season. To these causes, we must add the general condition of the back yards, and enclosures in the town. All the prudential measures of an effective police, seem to have been totally abandoned, and the committee are compelled to say, that every part of the town presented a striking proof of the extreme neglect of a large portion of our citizens, to the ordinary duty they owe themselves and their neighbours, that of keeping their yards and possessions clear from every species of filth which may be injurious to health.

Ponds of water in various parts of the town, were suffered to remain undrained after the rains, and became stagnant, thus affecting the air with poisonous exhalations." These, besides a variety of other nuisances, which are as particularly described by the committee, and represented to have been exposed to the heat of a very uncommon summer, are stated as being abundantly sufficient, to account for the local formation of yellow fever. No unusual sickness appeared during the previous winter, spring, and summer, until the first of July. In the latter part of that month, "a number of violent cases of bilious fever occurred among persons unaccustomed to the climate, and some of a more questionable character. Several persons employed as workmen in filling up one of the new wharves, were taken violently ill, and died after a short illness of two or three days. About the same time, two persons usually employed about Dauphin-street wharf, were taken in like manner, and died after a short illness. A number of carpenters and sailors employed about the wharf south of the fort, and were much on board the schooner Sally, filled with stagnant water, and the steam saw-mill, where there was a pond of like offensive water, were taken with violent fevers, and several of them died; but as the physicians who attended all the persons alluded to, are dead, the particular symptoms of the

fever cannot be well ascertained. It is however known, that Dr. Lawton, one of the attending physicians, spoke of these cases as malignant fever. Soon after these cases occurred, Snyder, an engineer, at work on a steam-boat at the same wharf, died with violent symptoms of fever, after an illness of five days. Plank, who attended Snyder, and employed at the same place, and a Dutch servant boy, who lived in the house where Snyder died, were a few days after taken with like symptoms of fever, and died on the third or fourth day. All these cases, were by the attending physicians, now dead, declared cases of yellow fever, and it is in evidence to the committee, that they died with black vomit. Snyder died on the 7th August, and Plank on the 9th, several other cases occurred about the same time among the workmen, at one of the new wharves, and terminated fatally after a short illness. At the two wharves mentioned, the first unequivocal cases of the yellow fever made their appearance; and about the same time, other cases occurred, which terminated fatally with persons usually about the stores, near the wharves and river, about the same period."

The committee then go on to investigate the evidence respecting the introduction of the fever from Havanna, in the sloop Patriot. It will be seen that she did not arrive until the 19th of Au-

gust; ten or twelve days previous to that time, several persons in Mobile, had already died with black vomit, and many also had fallen victims to a malignant disease in the latter part of July. The committee state that "the vessel arrived at the wharf, direct from sea, on the 19th of August, after a passage of fifteen days from Havanna. The officer of the customs says, that 'he was the first person on board the Patriot after her arrival, that he examined her cabin, hold, and cargo; that the cabin and hold of the vessel appeared, from any thing he could discover, in a pure and wholesome state. Sixteen bags of coffee, however, were wet, and considerably damaged, and some fruit rotten; the rest of the cargo in good order, that he attended the unlading of the cargo three days; the master, passengers, and crew, appeared to be in good health, excepting Graham, a seaman, and the cook, who appeared to have had a fever. Graham was able to do duty on board, the cook not much unwell: that the vessels which arrived at Mobile during the months of June, July, and August, were generally healthy, no vessel except the Patriot, arrived from a West-Indian port. The schooner M^cDonough, arrived the 17th of July from Nassau, N. P.' From the most diligent inquiry in regard to the state of the town, and the cases of fever, which had existed before the arrival of the Patriot, the

condition of that vessel, the passengers and crew, as well as the vessels which arrived from New-Orleans and elsewhere, the committee are constrained to express their decided conviction, that the malignant fever which so recently afflicted our town, originated in the numerous causes they have mentioned, favoured by the destructive effects of the storm and the subsequent season." For upwards of forty days in succession, it rained, and frequently with great violence, until "the evening of the 10th September, when it cleared off, wind N. W. with hot sun, and so continued for sixty-six days, to November 16th, the wind varying from N. W. to N. and N. E. during the whole of this period, there was scarcely rain sufficient to lay the dust in the streets." "The effects of the change of weather on the 10th September, were very obvious to all. In a few days after the wind changed to the northward, with a clear sky and hot sun, the fever made its appearance in *different* parts of the town, in all its fearful, deadly type. On the 16th, 17th, and 18th, *thirty* persons are reported to have died. Alarm spread through the town, and those who could, conveniently, left it;" of the poorer class of people, "which embraces nearly all those who arrived in town from the public works on Mobile bay, the fever was observed to be dreadfully mortal, almost all of them died. Of more than a hundred discharged

at those works, who came to Mobile, it is believed that very few are alive. At certain places in town, there was a continual succession of these people arriving, and passing to the grave." "For a while, the disease seemed to be mostly confined to those employed about the river and wharves, but in a few days after the prevalence of north wind, and clear hot sun, September 16th, it spread rapidly through the whole town, and from that date, seems to have affected the creole inhabitants, people of colour, and even slaves."

The settled population of the town, in the month of July, was estimated at thirteen hundred, by the middle of September, it was reduced by removals, death, &c. to five hundred, and many "of these were in the suburbs of the town, where the fever did not prevail." It is supposed that one hundred and fifteen of the resident population died of yellow fever, and that the whole number of deaths from the same cause, was near three hundred. The sick generally died on the first, third, or 5th day of the disease. We finish this abstract with the remarks of the committee, respecting the non-contagiousness of the disease. "It was observed that the suburbs of the town, at no greater distance than one mile from the river, were as healthy during the prevalence of the fever, as more distant parts of the country; and it is not known that the disease was communicated,

in any instance, to persons out of the town, by the removal and attendance of the sick. Hence we infer, that the disease is only communicable in the atmosphere where it originated; and even there, some predisposing causes appear to have been necessarily existing, as a number of persons frequently in rooms with the sick, the dying, and the dead, in circumstances of the greatest exposure, never took the fever."

The report, from which the preceding extracts have been taken, may be thought by many, to be more valuable from the circumstance of its having been drawn up by a number of the citizens, one of whom only was a physician, who could have no theory or professional opinion to maintain; and whose residence, business, interest, and perhaps feelings were all concentrated in that particular place. In spite of all these usual inducements to conceal the truth, as has been customary in other older and more conspicuous places, from interested or commercial considerations, they adopted a course, suggested by wisdom and humanity, of avowing the causes of their affliction, in the hope of averting the evil hereafter. Instead of holding out the allurements of health and prosperity to induce strangers to visit and settle in their town, they have raised a warning voice to the inhabitants to be "zealous and active in the removal of the numerous causes of disease, daily trodden un-

der their feet, daily presented to their view." It is the peculiar excellence of the truths of this doctrine to rouse public attention to such efficient measures, as will permanently arrest the progress of human misery, so much accelerated by the sufferings and mortality of yellow fever; while the opposite doctrine of importation, exclusively upheld, will sooner or later, as certainly lead to the invasion of yellow fever by surprise; when its ravages will be proportioned in some measure to the neglect of the means of internal prevention.

It is understood that the yellow fever prevailed to an unprecedented extent the last season at New-Orleans, and proved fatal to more than three thousand persons. We have not yet seen any published account of it, but from private communications we are informed, that it was of an unusually malignant character, and resisted all the methods of treatment which had formerly been resorted to, and that every departure from the ordinary plans of treating it, had proved equally unsuccessful. Many of the physicians of that place, after believing for a long time in the foreign origin and contagious character of the disease, have now arrived at the settled conviction of its indigenous and non-contagious nature. The annual returns of this dreadful scourge for many years past, have furnished the most melancholy opportunities of correcting the previous errors of inexperience,

and some of the most distinguished physicians, from their observations in New-Orleans, have been compelled to abandon long cherished opinions of its contagiousness, imbibed in the schools in which they were educated. The Governor of Louisiana, however, has officially announced his opinion that it is contagious, and has applied to the Legislature to enact more efficient laws against its importation. His opinions and proceedings are doubtless the results of the most profound reflection and research ; but, we apprehend that legislative enactments of that kind, will be inadequate to prevent the re-appearance of the disease ; and should they even effectually preclude the approach of yellow fever from abroad, they cannot possibly extinguish the many local causes of that disease, which are to be found in and about the city of New-Orleans. Other legislative measures directed to the improvement of the city, by draining, raising, and paving the streets and yards, so as to prevent all collections of water, and exhalations of foul air ; the establishing of a rigid system of police for the preservation of proper cleanliness, and purity of the atmosphere ; the draining of the adjacent marshes, and covering them as far as practicable with a thick layer of sand or stone ; and facing the banks of the river wherever it can be done, and preventing the exposure of its mud and filth on the falling of the water, will, in our view

of this subject, contribute much more abundantly to the health of that city, than the enforcement of the most perfect system of quarantine that has ever been devised. But as long as the many fruitful sources of disease, some only of which we have mentioned, are suffered to remain, so long will New-Orleans, under the influence of its present climate, continue, like Constantinople, to feel the annual returns of this destructive endemic. During the last season it appears to have prevailed with a dessorating violence little short of the plague. As the endemial disease of that section of country, cases of it more or less violent in their nature, are met with throughout a very large portion of every year. It is not therefore the mere existence of yellow fever, but the extent and violence of it, that create alarm in the inhabitants of New-Orleans; and it is to be hoped, that its presence in that city will never be proclaimed like the existence of the plague in Constantinople. It is said that the plague annually visits that city, and occupies a large portion of the year, and its existence is only proclaimed when a hundred bodies are carried for interment through a certain gate in one day, and then prayers are offered up on account of the disease. Whatever may have been said respecting the difference between the yellow fever and the plague, there are certainly many points of strong resemblance, that have been notic-

ed by physicians in the course of the epidemics of yellow fever, in different parts of the United States. In this city, and elsewhere, cases have occurred, corresponding in every respect with some of the descriptions of the plague; and these, it may be remarked, do by no means uniformly correspond, so as to establish the identity of the diseases which have at different times appeared, and passed under the appellation of plague. Indeed, it seems, that under this vague term, several, and actually different, diseases have been described by authors, and the facts related by some of them preclude the belief in its long asserted attribute of contagion. By some authors, it is described as a proper typhus fever, unaccompanied by any diseased state of the liver, or its secretion, and resembling the fever which frequently appears in the winter season in the crowded, dirty, and ill ventilated houses of the poor, and which has completely ceased on the destruction of their dwellings causing a more free circulation of air; while by others, it has been described as a summer or autumnal disease, associated with functional derangement of the liver. From the treatment which it sometimes admits, it would seem to be an inflammatory disease, and at other times, the success of the stimulating plan would indicate it to be of a purely typhoid character. Dr. Neale writes, "the real truth may be, that

plague is nothing but bilious remittent fever, under its worst possible form, attended with petechiæ, blains and swellings of the lymphatic glands, which sometimes suppurate, but oftener do not. If they suppurate, or the patient perspire freely, he recovers, but if not, the disease proves fatal. All those who have the plague, however, have not buboes, and these are generally believed to have remittent fever only. Hence the strangest contradictions and mistakes are to be found in all writers on this subject, and they have from time to time occasioned wrangling, scepticisms, and false reasoning without end; some asserting the non-contagion, and others the wide propagation of pestilential virus." He considers that the unhealthiness of Constantinople results from the great extent of marshy ground which bounds it in almost every direction, comprising in his opinion twenty square miles of marsh; and expresses no surprise that its half civilized population "fasting all day, gorging all night, wallowing in sensuality, or expiring from misery, clothed constantly in animal substances, generally in a decaying state, without changes of linen, and hovering all winter over the effluvia of charcoal, should be the victims of pestilential poison.*

* See Dr. Adam Neale's Travels through some parts of Germany, Poland, Moldavia, and Turkey, published in 1818.

As it is not yet in our power to give any authentic history of the epidemic of 1819, or of the various methods of treatment which were resorted to, we shall here insert an extract from a report to the Medical Society of that place respecting the yellow fever of 1817—calculated to convey some idea of the situation of New-Orleans, the character of the climate, and of the origin and nature of the disease.

The report commences with the origin of the disease, and in treating of the atmospheric constitution it is added, that “the months of April, May, and June of 1817, were very rainy, the country around New-Orleans remained for a long time covered with water. The tides of the lakes also rose higher than usual, the winds, which until the end of June, blew almost constantly from the south, now suddenly shifted round to the north. A humid and stifling heat prevailed, during July and August. About the end of June, the thermometer stood at 92° . In July it varied from 86° to 92° ; in August from 84 to 94; and towards the end of September, from 80° to 85° . This city, New-Orleans, situated below the level of the river, stands upon a soft and humid soil, and is surrounded by vast marshes and cypress forests. When the river falls in the summer, it always leaves a large space before the city, covered over with mud and putrifying animal and ve-

getable matters. Strangers who had recently arrived, or such as had not yet become inured to the climate ; young and robust men, of a sanguine temperament, or of a gloomy and timid disposition, were more obnoxious to its attacks, than those advanced in age, and of a feeble and delicate constitution, but full of courage and resolution. Pregnant women generally suffered abortion, when attacked with the disease. The planters of the Antilles, the creoles, and the inhabitants of the surrounding country, generally escaped the fever. A number of infants fell victims to this epidemic. Many persons died in neighbouring places, whither they had retired too late, without, in a single instance, communicating the disease to others. Not one negro is remembered to have had the disease.

The epidemic manifested itself in July. Many symptoms of this disease had, however, been noticed so early as the latter part of June, especially in the city hospital, *before* the arrival of a vessel from Havanna, which had lost a part of her crew by the black vomit, during its passage. The disease increased in its ravages during July ; and acquired great malignity in August, on account of the arrival of a great number of Europeans and Americans at that time. In the beginning of September, a violent storm took place, upon which the epidemic abated its fury. Weather

variable until the 20th of this month; at which time, the south wind began to blow anew. The heat again became very intense, and the fever still raged with violence, especially among those who had lately arrived."* In the same season of the same year, to which the above report alludes, the town of Natchez, about two hundred miles distant from New-Orleans, was visited with the yellow fever, and suffered a very great reduction in the number of its population. At that time, we are informed by a very respectable physician of the place, it was found so absolutely impossible to trace it to New-Orleans, that its local origin was admitted by general consent. During the last season, it again appeared at this place, and destroyed between two and three hundred of the inhabitants. We have seen several persons who have visited Natchez, and among the number some very respectable physicians, who have spoken of the occurrence of yellow fever there as a matter of course, consequent to the abundance of stagnant water in and about the place. The alteration in the shape of the ground about Natchez, for the purpose of regulating the streets, has caused a number of water-pools, the exhalations from which, have proved particularly of.

* Vide Rapport fait à la Société Médicale, sur la fièvre jaune qui a régné pendant l'été de 1817. Par M. M. Gross et Geradin, 8vo. p. 62.

fensive. Dr. Kerr, in a communication to a correspondent in this place remarks, "our little city was last year a second time ravaged by a most malignant and fatal disease, and yet strange to tell! the same destructive policy is pursued, which I have no doubt was one of the principal causes of the former visitations of yellow fever. Should the same kind of season again occur, very wet in July and August, and hot and dry in September, October and November, I have no doubt we will again have our town depopulated. The injurious policy to which I allude, is the effort to reduce the naturally rolling or hilly surface of the town to something like a level, by digging down the hills and filling the vallies. It may readily occur to you how the progress of such efforts would prove deleterious."

It should be remarked also, that the town of Natchez, although situated on an eminence, is surrounded in a great measure by low marshy ground, more or less contiguous to the place, and in some parts very near to the town, and that this town is in the midst of a country which is annually subject to the prevalence of bilious remittent fevers of a more or less aggravated type.

It was not considered safe to visit either Natchez or New-Orleans the last year, until the beginning of the month of December.

From the existence of yellow fever in the West Indies, and in so many different places of the United States, serious apprehensions had been entertained for some weeks, that this city also, was doomed to experience a visitation of that disease. Several of our physicians had observed the growing causes of it in the character of the season, and the filthy condition of several parts of the city. The great heat of the weather, the unusual prevalence of disease, and the great mortality which occurred in our city and parts adjacent to it, have already been noticed. Several instances had been remarked in the month of August, of persons being attacked suddenly with bilious affections, which terminated abruptly in death, after exhibiting a rapid succession of violent symptoms. Severe cases of bilious remittent fever appeared in several parts of the city and suburbs, accompanied by great prostration of strength, or inordinate disturbance of the animal functions. The tendency of the weather, to produce miasmatic diseases, was supposed to be controled by the unusual dryness of the season, being unfavourable to the production of those deleterious exhalations which usually engender a long list of summer and autumnal diseases: this perhaps is the reason in some measure, of our city escaping a greater degree of sickness, which is oftentimes proportioned to the intensity of heat, and the co-

existence of local causes, combined with the agency of moisture.

The Board of Health aware of the danger of the yellow fever making its appearance had adopted all the necessary measures of precaution against its introduction from abroad. The Board in their report of the 25th of October 1819, say that "in this state of things it was to be feared, that some spark of that pestilence which was raging round us in so many directions might alight and kindle here. To guard as far as possible against this danger, the board determined that our quarantine regulations, as far as they were under their control, should be carried into full effect." The quarantine law, it is believed, was rigidly enforced in relation to our own city, whatever may have been the danger from the frequent violations of it to our sister city, Philadelphia; and we are not disposed to justify the unchristian conduct of disregarding the health and lives of our fellow creatures, by permitting persons to go to a neighbouring town, or elsewhere, on condition of avoiding the risk of contaminating the good people of our own city, by a premature visit to them. This however arose from a defect in the health laws, which until corrected, served to protect the administrators of them from all lawful condemnation.

Notwithstanding the vigilance of the Health Officer, and the solicitude of the Board of Health for the security of the city, yet it was afterwards discovered that vessels had actually come into the river, adjoining the wharves on the east side of the town, after undergoing a detention and purification at the quarantine that were inadequate, *it is supposed*, to the extinction of disease. The most obnoxious of these vessels, it now appears, was the sloop Hiram, from Baltimore, upon which the odium of introducing the pestilence is rested. It is said that this vessel brought to New-York the disease which prevailed at Fells Point in Baltimore; that a person died on board of her on the third or fourth day, having sickened on the day of sailing; that two days after his death, another person sickened, who, together with two others, on their arrival at quarantine, were admitted into the hospital; the first of whom died; the other two soon recovered; the one from an intermittent, the other from a mild remittent fever. The complaints of the first two, we have no doubt, arose entirely from intemperance, and we are supported in this opinion by the testimony of the captain under oath, and his testimony is corroborated by the concurrent opinion of the crew and passengers of the vessel. The report which has been given to the public, and presented to the Board of Health as evidence of the importation

of the yellow fever was obtained from the mate of that vessel; but his character has been impeached by the captain, crew, passengers, and proprietors of the sloop, and he has since avowed his ignorance of what is contained in the communication of Dr. Hicks to the Board of Health, and has expressed his immediate readiness to be qualified to the *denial* of all that he is there stated to have said. The mate of the vessel was reputed to be an exceptionable character, addicted to intemperance, and unworthy of credit. He was dismissed from the vessel on account of improper conduct, it is believed, some time before the communication of Dr. Hicks was submitted to the Board of Health, which was not until the second of November. The most ample refutation of that statement which we ourselves have heard in the progress of investigating this subject, together with the letter of Dr. Harrison, assistant of the late Health Officer, in answer to Dr. Hicks' letter, have left us entirely uninfluenced in our opinion by the story of the mate. He is made to say that the disease of which the two men died, was the same as that which prevailed at Fells Point in Baltimore, and that he, the mate, was refused admission to the quarantine Hospital, on account of the man's disease, which was yellow fever, and contagious. This statement of Dr. Hicks, and his mate, certainly differs very widely from

the account given to others by the late Health Officer, who did not consider it as a case of yellow fever, but allowed the vessel to come to the city on the eighth, after a quarantine of only five or six days, having released the passengers from all further restriction on the third day after their arrival; nor will Dr. Hicks' letter bear examination in connexion with that of Dr. Harrison, the latter is minute and circumspect in his account of the circumstances, as far as he has become acquainted with them, and discovers no bias of previous opinion or prejudice; while the former discovers the flimsy and delusive nature of the premises from which he makes his deductions, as well as an unreasonable degree of credulity in examining so intricate a question of medical evidence. We should not have noticed the letter of Dr. Hicks were it not that its matter, and the time and manner of its appearance, had vitiated the object of giving it to the Board of Health. For it is a little remarkable, that this account of the importation of yellow fever, from Baltimore, did not appear until long after the disappearance of the disease from this city. A reference to dates will show more clearly, that this story of the mates was altogether a gratuitous assertion, or an unwarrantable assumption on the part of Dr. Hicks. The *Hiram* left Baltimore on the 24th July, and the fever did not appear at Fells Point until the 17th

of August. The vessel however, it is admitted, did not come from Fells Point, and may therefore have brought the disease from that part of the city, Smith's Dock, from which she did sail, and where several cases of the fever did actually appear in the latter part of July, but whether on or before the 24th of July, we are unable to say; the captain's belief was, and he expressed it under oath, that Baltimore was healthy at the period of his departure. It is highly probable that it was within a very few days of the time of the fever making its appearance at Smith's Dock. From the account which has already been given of the yellow fever at Baltimore, it appears, that neither the physicians, the Board of Health, or even the public, generally, of that city, believed it to be contagious, and that no instance of its personal communicability had been detected by the most vigilant contagionist; that the persons who sickened with the fever had invariably taken it in certain districts of the city, and that in no instance did it spread in other parts of the city into which the sick were frequently carried; or even in the Hospital itself, where numbers were received with that disease. Admitting therefore that the man, Wright, who is said to have died of intemperance, did die of yellow fever on board the Hiram, and that John M'Kinley had yellow fever also, of which he died in the Hospital at quarantine, how

happens it that the disease ceased altogether on board of this sloop, "so laden with the dreadful infection,"* and having fourteen passengers, besides the captain and crew. The other two sick persons recovered, as we have already stated, the one from an intermittent and the other from a mild remittent fever. No other of the crew or passengers took the disease.

The sloop came to Old-slip about the 8th of August, and was immediately visited by her owners, their friends, those of the captain, and a number of other persons who fearlessly went on board, and many of whom have remarked to us the neat and cleanly state of the vessel. Not a single case of disease occurred among the many persons who had boarded her. The greater part of the cargo we understand was taken out of the vessel at quarantine. On her arrival at Old-slip, twelve or fifteen pipes of Gin were landed, and on the next day the captain, having taken his wife and children on board, proceeded in the vessel to the Navy Yard, there landed a quantity of iron and copper, and returned with the vessel two days afterwards to Old-slip; here it is believed she remained but a short time, the captain wishing to make some repairs and to have the vessel graved

* See Dr. Hicks' letter to the Board of Health, November 2, 1819.

and painted, went in her to some other more convenient place, and again took his family with him. He returned about the time of the shipping being ordered from the wharves, which determined him to go to Cow Bay, whither he carried his wife, family, and some friends, all of whom, amounting to more than twenty persons, continued to enjoy their usual health. We have inquired very minutely into all the particulars of this vessel, and are authorised by captain Evans to state, that the last time he left Old-slip, was at the instance of Dr. Hicks, who *advised him* not only to go himself, but to take his wife and children with him on board of this vessel, "so laden with the dreadful infection," *according to his own report two months afterwards*. Why was so important a letter written so long after, the events to which it alludes, when it was a matter of public and moral duty to disclose them at once. If he had any suspicion, or even the least reason to apprehend that the vessel was diseased, as he afterwards stated her to be, he was required by every principle of humanity to dissuade from, instead of encouraging men, women, and children to such dangerous exposure of their health and lives.

It would seem then, that the Hiram was not an infected or diseased vessel; and if the disease which she is charged with having introduced, was like that of Baltimore, it would not spread from

intercourse with the sick, since no instance occurred there of its being communicated by contagion. Indeed no case of indisposition occurred on board the sloop after she arrived at quarantine, nor have we discovered a single instance of fever being traced to her, notwithstanding the many vague reports to that purpose, all of which we have carefully and we believe dispassionately examined. But it is said that a passenger of the name of Mary Stevens, went to the house of Mrs. Kavanaugh, on the west side of Old-slip, and there assisted Mrs. Kavanaugh and Margaret Brady, in washing the clothes of some of the crew of the Hiram, and that Mary Stevens had the clothes of Wright, who had died at sea. Mrs. Kavanaugh did not wash clothes, nor did Mary Stevens lodge at the house of Mrs. Kavanaugh, nor were any sailors clothes washed there. Moreover, the captain of the Hiram has distinctly stated to us, that the clothes of Wright were buried with him at sea, those of M^cKinley, who died at the hospital, Dr. Harrison, the assistant Health Officer, has positively asserted did not come to the city. Mary Stevens remained but a few days in the city, and continued to enjoy good health, both while there and afterwards. She went to Mrs. Kavanaugh's intending to stay there until a vessel should return to Baltimore, for which she was waiting, in the expectation of

sailing in a day or two. She found Mrs. Kavanaugh sick, and unable to receive her, and did not remain there even until night; and we find by the letter of Dr. Harrison, that she and her child were soon afterwards boarding in the neighbourhood of the quarantine. We have stated the above particulars, because they are the result of inquiries which we ourselves have recently made of the captain and owners of the *Hiram*, and of the friends and acquaintances of Mrs. Kavanaugh, and also of other persons who cannot be suspected to be in any way interested to garble or conceal the truth. Similar inquiries we find were made by Dr. Pascalis, and communicated to the public in November last; and as they were made in the presence of a third person, and a long time before this article was commenced, and almost immediately after Dr. Hicks' letter was presented to the Board of Health, we shall insert part of that communication for the express purpose of showing that Dr. Hicks' letter will not bear examination, even in relation to those very matters of fact which it purports so triumphantly to set forth. "On Friday morning the 12th inst. (Nov.) and in company with Mr. G. B. Rapelye, I called at No 23 Old-slip on Mrs. Crosby, a respectable woman, who has kept a school for several months in the larger room of the house formerly tenanted by Mrs. Kavanaugh. On being asked several ques-

tions, she confirmed the circumstances already mentioned in my statement, viz. that her landlady, with whom she had been acquainted for a number of years, did not take in washing, there being no yard, nor other required conveniency on the premises, she did not keep any but female boarders. Mrs. Crosby keeping a school in the house, would not have suffered her to receive sailors as boarders. She then related the circumstances of her, Mrs. Kavanaugh's, last illness, during which she remained with her, and dressed her when a corpse. Two days after she was taken ill, three women just arrived from Ireland, by the way of St. Johns, New-Brunswick, on their way to Baltimore, where the husband of one of them resided, applied to her, Mrs. Crosby, for the temporary use of a room, much wanted for one of them who was indisposed. This favour Mrs. Crosby could not grant herself, but she obtained it from Mrs. Kavanaugh, who from motives of charity, allowed those women the use of a little room adjoining her school. Dr. Bliss, who was attending Mrs. Kavanaugh, was applied to by Mrs. Crosby, for the woman indisposed with a bowel complaint. She soon appeared to recover; but this was Margaret Brady, who, on retiring from the house of Mrs. Kavanaugh, to *No. 65 Water-street*, and from thence to quarantine, died of yellow fever. Mrs. Crosby was

asked whether she had any knowledge of a young woman named Mary Stephens, having been a boarder sometime in the middle or latter end of August, and a passenger in a vessel from Baltimore. She replied that a young woman from *Boston*, (name not remembered, except her christian name Eliza) had been a few days at Mrs. Kavanaugh's."

It was not until the 29th of August, that Mrs. Kavanaugh died, and admitting her death to have occurred, as is stated, on the fifth day of her disease, it leaves a period of sixteen or seventeen days from the arrival of the *Hiram*; and Margaret Brady was not reported sick until the 2d of September; it is not pretended that either of them visited the *Hiram*. In the house adjoining that occupied by Mrs. Kavanaugh and Margaret Brady, a lad of the name of M'Kay, and a man of the name of Olderloyd, were reported to be sick with yellow fever, the one on the 6th, and the other on the 8th of September. The two Van Nests sickened on the 30th and 31st of August, and died the 5th and 6th September. Mr. Brown died at 68 Front-street, on the 2d September, and John Davis, two doors from Brown's, on the 5th, and corporal Evans, who died about this time at Governor's Island, was in the habit of residing occasionally with Mr. Brown.

Not one of these nine cases recovered.* On the 6th of September, the Board of Health issued their circular, recommending to the inhabitants within certain prescribed limits to remove therefrom; and directing their agents to inspect the said district, and to remove every source of impurity that might be discovered in the streets, houses, and yards thereof, and also ordering the removal of all vessels from the docks within the said bounds: viz. "beginning at the foot of pier No. 8, east river, thence running on the easterly side of the same pier, and the adjoining slip to the corner of Pearl-street, thence up Pearl-street to the west side of Wall-street, thence down Wall-street to the east river." "It was in the same spot, where the fatal summer of 1798 had commenced its ravages, by a scourge which now seemed to be gradually diffusing itself."

We shall next examine the evidence that has been produced in relation to another vessel, that has been charged with introducing the contagion of yellow fever.

The French ship *La Florentine*, from St. Pierre, Martinique, where the yellow fever prevailed at the time of her departure, and where she

* Dr. Pascalis has given a detailed statement of the history and progress of the fever, from whose work the above is taken.

had lost one of her passengers with that disease, came into the east river on the 24th of August, after performing a quarantine of thirty days. We do not learn that any sickness whatever, had occurred on board of her, from the time of leaving Martinique, until her arrival in the east river, a period of *fifty days*. She was not allowed to come to the *wharf*, but was ordered "to be anchored in the stream." It was not till the beginning of September, but how early in that month we are not told, that two of her seamen were taken sick with the fever, and she was ordered back to quarantine, and soon after went to sea. The date of their sickening it appears, was subsequent to the existence of the yellow fever in Old-slip, with which place, the captain and crew of that vessel had constant intercourse, which may also account satisfactorily perhaps for the death of the captain, which occurred at sea, and prior to the 25th of September, when she arrived at the quarantine, having met with a storm, and put back in distress. If the seaman and captain died of disease arising from a contagious principle on board of the vessel, and not of disease contracted in their visits to Old-slip, this ship furnishes a decided proof of the insufficiency of quarantine regulations as instituted at this port; and their insufficiency we apprehend, arises from their being founded on the principle of con-

tagion, instead of resulting, as we believe they ought to, from the nature and condition of the ship and cargo; and also from vessels being permitted after the performance of lawful quarantine, to take their stations opposite to those parts of the town, where the air is already polluted, and the disease actually prevailing. The convenience and facility of reaching the shore, is necessarily a temptation to the undisciplined sailor to visit the sickly quarter, and the irregular and intemperate habits of these men, furnish abundance of exciting causes of yellow fever; and these habits are necessarily indulged on such occasions, in conformity with popular notions, as measures of prevention. The case of the brig *Eliza* may also be cited as evidence of this defect; she reached this port on the 13th of August, "after a passage of six days from Charleston, having on board a sick passenger, who died the same day with yellow fever. She performed a quarantine of thirty days, and was three times white-washed, her limbers were taken out and cleansed, and she was otherwise purified, and on the 16th September she was allowed to anchor in the stream. Yet on the 6th October, her captain died of yellow fever, and on the 7th, one of her seamen sickened with the same disease." It is to be borne in mind that the captain and crew of this vessel also had communication with *Old-slip*. It is not pre-

tended I believe to attach to her the credit of introducing the disease, since she did not even come into the river till the 16th September, and the disease at Charleston it appears was not communicable; it was not even communicated by the sick passenger, who died the day on which the vessel arrived, unless we suppose the poison to have been *dormant* in the Captain and seaman for the space of fifty days; or that the contagion which did not even discover itself either at Charleston, Baltimore, Philadelphia, or Boston, about the persons of the sick themselves, had attached itself to, and was yet unextinguished in the vessel, notwithstanding the minute and thorough process of purification which she had undergone for upwards of thirty days. Why then is it that a frost of a few nights so effectually arrests it, when it bids defiance to all the means of art which were here resorted to; and if this principle of contagion did actually exist in the vessel, from whence was it obtained? it did not exist in Charleston, nor was it propagated in a single instance here, by the most concentrated effluvia arising from the disease of yellow fever itself. We have the authority of the Board of Health, to state, as well as the concurrent testimony of almost every physician who saw the disease, that it was not contagious, *excepting in one solitary instance*, the real nature of which, is so cloud-

ed by moral and professional obscurities, as to destroy its validity even as an exception. It was the last case reported to the Board of Health, and it was not even reported until after the recovery of the patient. Nor has it been asserted by these zealous partizans of contagion, that in this, more than doubtful instance of contagion, the disease spread to a single other person. Yet this case, with all its humiliating circumstances, furnishes the miserable amount of evidence of the contagiousness of yellow fever, derived from the epidemic of 1819 in this city. It is true, that other and "*stronger*" proofs of it were promised by its partizans, but, as little regard has been paid to the fulfilment of these promises, as to the means which have been employed to disseminate the errors of that pernicious doctrine. At this time the Board of Health had officially declared in their report of the 21st September, that the sick had in *no instance* communicated the disease. The poor of the infected district, to the number of one hundred and fifty, were removed to Fort Richmond on Staten Island. As might naturally be expected, some of them carried the disease with them, and several, if not all of those who sickened, died of yellow fever; yet the disease did not spread, although these poor people had been thus hastily crowded together, under circumstances calculated to favour

the extension of febrile poison. Nor did a single instance of the disease, spreading by contagion, occur at Fort Stevens on Long Island, where the sick poor were conveyed whenever it was practicable. With these facts, together with the many similar ones already related of Boston, Philadelphia, Baltimore, Charleston, Savannah, Mobile, Natchez, &c. we should naturally conclude that the question of the contagiousness of yellow fever would be suffered to rest, at least, so long as facts continue to press in such numbers against that doctrine. Here, without any concert, we find the towns on the Atlantic coast, from Georgia to Maine, declaring through their respective Boards of Health, which are composed, in some instances entirely, of men who are not of the profession of medicine, and in every instance, of some who do not belong to that profession, that the disease was not contagious, and that it was confined to certain districts, the atmosphere of which, was so impure, as to render it dangerous to visit them even for a short time. Several persons we are informed by the Board of Health took the disease in consequence of going into the infected district, and "thus kept alive the disease, which would otherwise have ceased for want of subjects on which to prey."

The disease, as reported to the Board of Health, was actually confined within the bounds

of the forbidden district, and however many sick were taken from it, and wherever they were removed to, still was the number of its victims not increased by a single case occurring beyond the barriers erected by the Board of Health. To the energetic and efficient measures of that Board during the last season, the inhabitants of this city are much indebted for the limited extension of the yellow fever. Whatever differences of opinion may obtain respecting the policy or lawfulness of some of their measures, there can exist no doubt of their being founded in humanity and good sense, and that they have resulted in the saving of human lives. To the intrepidity and unceasing vigilance of the chief magistrate, many of the inhabitants of that district, as well as of other parts of the city, are now indebted for their existence and exemption from the disease. The salutary precautions of the Board of Health were for a time ridiculed and opposed, but the propriety of their proceedings soon became apparent, *and the event perhaps has fully justified the means which were resorted to.* It is not at all surprising that the *Board of Health* should be desirous to trace an evil of this nature to a foreign source, and that their apprehensions should be excited lest, "some spark of that pestilence which was raging around us in so many directions might alight and kindle here." A Board of Health so

constituted, influenced by such natural fears, and so unprepared to appreciate the subject of contagion, could not be expected, nor perhaps would it be right officially to deny all belief in the importation of such a poison; their station clearly indicated to them the duty of laying before the public such facts as might come to their knowledge respecting the sources of this disease, and after as careful an investigation of them as could be made, to enforce the execution of wise and wholesome laws for their prevention or removal. We have been led to these remarks in consequence of observing in an able paper, on the subject of "contagion and the fever of the last season" in a late number of the North American Review, a reflection on the Board of Health, for stating on the authority of their Health Officer, some circumstances in relation to the sloop Union, from Boston, and also to show how improperly this vessel, in common with the others of which we have spoken, has been charged with introducing the yellow fever into Old-slip. The writer says, "we have seen no mode pointed out by which the fever of the last season was supposed to have been first imported into New-York, although the advocates of the doctrine of its foreign origin are numerous and zealous in that city. A most unjustifiable attempt, made by the Board of Health to trace one case to Boston, ought not to

be passed without notice. In their report of September 22d, the Board say, 'the Health Officer reported that captain Cary, of the sloop Union, had died at the Marine Hospital on the 20th. He had left Boston on the 2d, and his vessel had lain at the Central Wharf, near where the malignant fever prevailed.' The inference obviously intended to be drawn from this statement is, that captain Cary had taken the disease in Boston, and carried it with him to New-York. His vessel was ordered into quarantine; and because a passenger who had gone in her, after remaining seventeen days in quarantine, evaded the law, and returned to Boston, a proclamation was issued, offering a reward of one hundred dollars for his apprehension. It is perfectly well known in Boston, that there was no case of yellow fever on Central Wharf the last season, nor even on Long Wharf, by which the ship Ten Brothers lay, except of those who were actually on board that ship. If all the exertions of the good people of New-York, to trace their fever to foreign sources, are equally unfortunate, we fear, however disagreeable it may be to them, that they must still lie under the imputation of generating it among themselves."*

* See North American Review for April, 1820.

A similar inconsistent and unsuccessful course of measures, on the part of the Board of Health of Boston, has not escaped the notice of the writer, who, at the commencement of the article includes that place also under a general condemnation of the present system of quarantine regulations: he adds, "at the same time Boston was equally engaged in enforcing the same precautions towards her sister cities; her Health Officers were not prevented, by the prevalence of the fever in its most fatal forms, in a small part of the town, and occasional cases of it in almost all the other parts, from yielding to the dread of importing it from abroad, but applied to the southern cities the same system of quarantine which some of them had enforced against us."

That the advocates of the doctrine of the foreign origin of yellow fever are numerous and zealous, in this city, we are enabled to say for the credit of the medical profession of New-York, is very far from being correct; and no physician, resident in this city, would hazard such an assertion. It cannot, however, be matter of surprise to us, that a physician of Boston should entertain such an opinion, since so much noise has been made by a few contagionists, who have transferred the controversy from the profession to the public at large. No longer able to maintain their ground in a legitimate manner, with their breth-

ren of the profession, a few zealous partizans of *exclusive importation*, with a civilian at their head, have been driven to appeal, through a *public print*, to the umpire of prejudice and ignorance, to decide a grave and intricate question in medicine by popular opinion. The non-contagionists, unwilling to compromise the rank and dignity of science, and of their profession, silently decline the proffer of arbitration, and charitably deplore the humiliation of their brethren: hence it is that *the opinions of a few only*, on this subject, have been heard, and have sometimes obtained a degree of attention similar to that which is excited, by the relation of the virtues of a variety of nostrums, with which they have so often circulated in print.

In common with the writer of the article in that review, we regret the existence of a law, which not only exacts the observance of such severe conditions on the part of those who desire to visit our city for health, pleasure, or business, but authorises the advertising of citizens and foreigners, with offers of reward for their apprehension, like common felons. We see no cause for *triumphantly congratulating the public* on the detection of persons who have merely evaded the quarantine laws, by escaping from personal confinement; or boasting of the exercise of the power to stop a vessel or steam-boat, to enforce

the right of search for persons who have absconded, and perhaps under the fear of disease, from a place where the yellow fever actually exists, and the danger of which is daily encreasing by the arrival of infected vessels and diseased passengers. Such a situation is of itself, sufficient to excite disease in delicate persons—in those suffering from care, anxiety, or the vexation of business; and in those who are sinking under the effects of a sea voyage. From one end of the Continent to the other, it has been officially announced during the last season, that the yellow fever was not communicated from one person to another, and not even in hospitals, where the sick have been admitted in numbers. Why then should passengers be subjected to personal quarantine? does it diminish the risk of becoming sick to those who are healthy? or does it mitigate the severity of disease in those who have the misfortune to become sick? shall a person be cruelly compelled to expose himself to the risk of disease and death, and be debarred from the tender care and attention of relations and friends; or shall the aching heart feel the protraction of misery by the detention of a week or month teeming with anxiety and despair? The crew and passengers of a ship, will seldom escape altogether from sickness, if detained for any length of time inactive and dissatisfied; and after the confinement of a sea voyage, even the

most healthy stand in need of change of air and exercise; while the very detention of the vessel, serves to augment the evils and risk of personal detention; for if the ship on her arrival, be foul, or her cargo be offensive, or liable to rapid decomposition, as must ever be the case with fruits, and the various kinds of grain, and other articles, and the several materials employed as ballast, every hour's detention instead of lessening the evil, or diminishing the chances of the generation of disease, is adding to those very sources of impurity and nuisance, against which the law is designed to provide. We have seen from the official account of the Board of Health, how difficult it is to purify a tainted vessel; and have long since been taught the impropriety of admitting to our wharves, vessels that have been suspected to generate disease on board, independent of the existence of any supposed spark of contagion, or the possibility even of having received it elsewhere. Vessels crowded together along side of a wharf, or in a slip, are so many parts of a great nuisance, which, influenced by local and physical causes, as certainly become the source of disease, as the crowding together of the poor in old dirty and ill ventilated houses, is followed by disease and death. Vessels, with their cargoes and ballast, therefore, are the legitimate objects of a properly modified quarantine, and all its subsidiary

exactions, not only on their arrival, but throughout the whole of that season of the year, during which the yellow fever is apt to occur ; while passengers and the crews of vessels in health, should be allowed to disperse at pleasure, and be subjected to no other requisitions than those of personal cleanliness, and the purifying of their clothes and bedding. The doctrine of the contagiousness of yellow fever, has long been an abundant source of misery, by encouraging false impressions of its nature ; and the system of laws to which it has given birth, is a reproach to humanity, to the faculty of medicine, and to a free and enlightened people.

We cannot refrain from noticing the inconsistency of those who have contended for the contagious nature of yellow fever in one place, and its non-contagious character in another. The possibility of its being *produced* in one latitude by the agency of heat, and other causes, is admitted, as well as its *non-contagious* character in the pure air of that latitude ; while its *contagiousness*, and the impossibility of its being *engendered* in a more northern latitude, are as vehemently insisted upon. Now, if contagion be essential to the character of the disease, we should naturally look for the production of its similitude in those who might be exposed to its influence ; and, if it should be found that its counterpart can only occur under a peculiar combination of

circumstances, such as a high temperature and a peculiarly vitiated atmosphere, and then, independently too, of the existence of an actual case of the disease as the origin of the evil, should we not be wanting in philosophical precision to call it a specific disease, and yet not capable of propagating itself; a disease of tropical climates, and yet not capable of being produced, *de novo*, by that precise combination of circumstances, for a certain space of time elsewhere, which is admitted to engender, and keep it alive almost constantly in a tropical climate. If it be the effect of a cause, which is uniform in its operation, or necessarily productive of yellow fever, whence arise the infinitely diversified forms of yellow fever, from the slightest grade of the common fevers of this continent to the most aggravated form of putrid fever. The very fact of the extinction of the disease by the frosts of winter, is evidence that it depends upon a cause developed by the agency of a certain degree of heat, in connexion with some other circumstances, of the precise nature of which we are yet ignorant. That it depends upon the condition and temperature of the atmosphere, is presumable from the fact of its occurrence being associated, nine times out of ten, with the coexistence of moisture, of marshy ground, or of local sources of impurity, upon which the powerful heat of sum-

mer or autumn has acted ; and it does not seem necessary that the immediate influence of the direct rays of the sun should be exercised to extricate this cause of fever, since fevers not only analogous to it, but, judging from external appearances, in every respect the same as yellow fever, have been caused by accumulated filth, exposed to a high heat, as we have seen in Philadelphia the last season, and also by putrifying vegetable and other offals deposited in the cellars of houses and not exposed to the immediate action of the solar rays. That heat, however, is one of the principal agents in the evolution of the causes of this fever, appears from the fact, that it is acknowledged to be a disease of tropical climates. It is contended also, although it be a tropical disease, that it has not unfrequently passed the bounds of the tropics, and spread its ravages in distant places, the climate of which is not only unfavourable, but directly hostile to its production ; and that in these places, so incapable of engendering it, it *acquires* the character of a contagious disease, and is spread by personal communication with the sick ; but which property of contagion it again *loses* as soon as the sick are removed to a pure air ; which, in fact, is at once a concession, that the disease depends upon a peculiar condition of atmosphere, arising from heat and other circumstances ; and if so,

the spreading of it is entirely independent of the nature of the disease itself, and consequently appertains exclusively to the atmosphere ; a peculiarity which puts us in possession of a very singular species of contagion, that may be fearlessly and harmlessly imbibed in the vehicle of pure air, but becomes a noxious and fatal poison when wafted to us in a tainted atmosphere. It presents to us the singular and novel compound contagion, made up of the essence of disease and of the atmosphere itself, and may perhaps be successfully analysed by some future chymist, who may venture to explore this field of research, heretofore so entirely neglected by the learned in the art of chymistry.

It reminds us very forcibly of the inconsistency into which the celebrated Cullen plunged, in giving the definition of Synochus, a compound of Synocha and Typhus : at first, synocha ; but in its progress, and towards its termination, typhus. The compound is "a contagious disease ;" yet, by his own admission, the first part, synocha, is not contagious ; which leaves a part only of the compound possessed of that property. This we think analogous to yellow fever, which, "under certain circumstances, is communicable from one person to another," as stated by a modern Nosologist ; leaving him entirely at liberty to say when it is, or is not contagious, being a

convenient way of straddling the question, so as to save the trouble of investigation, and concealing the difference of words, by confounding the perplexing import of the terms contagion and infection to a more convenient season. This writer admits, by way of information in his book, that it is the same disease with the "*bilious remittent fever* of Rush and other American writers." Having publicly acknowledged the impossibility of distinguishing between these two diseases, he afterwards impugned the judgment of the late resident physician, and in a letter to the Board of Health, respecting the cases of the young Van Nests, reported to have died of yellow fever on the 5th and 6th September, concludes with the following:—"In these details you perceive the grounds upon which I expressed to you the opinion, that these are probably cases of bilious remitting fever, but not of yellow fever, which the first view of the sick might have led me to suppose;" and, in another letter, designed and equally well calculated to illumine the subject before the Board of Health, he remarks, "Were I to judge merely from the external characters of the disease, as exhibited at a single visit, *I frankly acknowledge* I should pronounce it a case of yellow fever. But, upon conversing with one of the physicians in attendance, and obtaining from him a circumstantial

account of the commencement and progress of the disease, I find that some of the essential features of that form of fever have been wanting in both these cases, and that the disease has exhibited, throughout, the symptoms of the *bilious remittent fever*.”*

The disease and death of the two Van Nests, soon greatly agitated the public mind, and especially as they were fearlessly and unequivocally stated, by the late resident physician, to be cases of yellow fever, and were followed by other cases of that disease, equally decided in their character. Indeed the author of these letters has denied that the disease was yellow fever; and attempted a most laboured and singular exposition of several circumstances wherein it differed from yellow fever; three days afterwards, viz. on the 9th September, he addressed another letter to the Board of Health in language of great decision. “This is *manifestly* a case of the yellow fever, attended with all the usual symptoms of that disease.” In regard to the case of the Van Nests, we are informed that the first *frank opinion* of its being yellow fever, was expressed under a *heedless belief*, that one or both of them, had been on board of a vessel which had imported the disease, or had

* See Dr. Hosack's letters to the Board of Health, dated 5th and 6th September, 1819.

been at, or in the neighbourhood of the quarantine ; but, on finding that this could not consistently with truth be allowed, the character of the disease was *immediately changed* into a bilious remittent, differing from yellow fever *in eight essential points*, as we are informed by his own letter ; but in the course of two or three days after, when it would have been hazardous to have persisted, even with consistent obstinacy to deny it, all these eight essential points are put to flight, and the next case is "*manifestly*" one of "yellow fever," "attended with all the usual symptoms of that disease." This, if closely examined, will be found to be rather an unfortunate acknowledgment in its bearing upon the doctrine of the contagionists. For we have already seen that the disease was not contagious here, or in any of the other cities north of Louisiana, and if so, it was not the yellow fever, but agreeably to the doctrines of the contagionists, only a remittent fever, by which it will follow from these letters, *if we really had the yellow fever in Old-slip last September*, that the cases which he pronounced to be bilious remittents, were in fact cases of yellow fever, and that the case which was so "*manifestly yellow fever*," was nothing more than a case of bilious remittent fever, and consequently, according to his own principles, that his diagnosis was wrong in both instances. For if the first two

cases were bilious remittents only, the third case could not be yellow fever, propagated by the first ; otherwise, the first must have been yellow fever possessing the attribute of contagion, which is not allowed to belong to bilious remittent fever ; but as no cases of the epidemic were discovered to be at all contagious, the third case also must have wanted this principle to constitute it yellow fever ; and must therefore have been a case of bilious remittent fever ; for the introduction of any new contagious poison, accounting for the cases subsequent to the two first, has not been even asserted ; *excepting* the instance of a person in White-street, but who did not introduce it until *two days after the death* of the man who was the subject of the *manifest case of yellow fever*. We have understood that the deceased was addicted to intemperance, and as alcohol not only disguises many diseases, but gives a peculiar susceptibility to, and increases the virulence of contagion, due allowance must be made for its accelerating the appearance of that case of the yellow fever, especially as it occurred in the impure air of No. 86 Front-street ; it was reported on the 9th, and terminated fatally on the 11th September. The person in White-street was reported at 2 o'clock, the 13th September. " This gentleman, although residing in White-street, *was exposed to contagion*, in the transaction of public

business at the quarantine hospital, during the illness of the late health officer."* In less than twenty-four hours, he was reported to be *convalescent*, the precaution having been first taken to *interdict* all communication with the sick man. It is said, however, that in the course of the same afternoon on which he was first reported, that he was induced by the consolatory attentions, and good humor of his friends, to get up, dress himself, go forth, and contradict the terrifying report of his illness; and the next day returned to his usual occupation. These circumstances serve in some measure, perhaps, to excuse the charge once publicly made against a former very distinguished and learned resident physician,† of incapacity to distinguish between the *jaundice* and *yellow fever*; we can now perceive a reason for suspecting the occurrence of such mistakes.

The following extract sufficiently explains the cause of these errors of judgment. "It is perfectly absurd to suppose that there are two diseases with characters so diametrically opposite, that one is propagated only by contagion, while the other possesses no contagious property whatever,

* See Dr. Hosack's letters of the 13th and 14th September, 1819, to the Board of Health.

† The late Dr. Edward Miller of this city, whose talents and professional writings, have raised the medical reputation of his country.

and yet with phenomena so similar as to render them incapable of being distinguished from each other, by the most accurate and experienced observers. But this circumstance does not stand alone; the two forms of disease are every where blended together, and run promiscuously into each other. Cases on record are frequent, in which a fever, which in the beginning was a mild remittent, has terminated with all the peculiarities ascribed to the bulam; and on the other hand, in which a violent bulam fever, has relaxed into a gentle remittent. We are, therefore, warranted in considering this disease as possessing the same general character, in all its forms and degrees of severity. If it is contagious in one place, it is so in another; and proofs that it is not extended by contagion, are fairly applicable to all places where the disease has prevailed." "If we examine the cases adduced as evidence that this is a contagious fever, we shall find, generally at least, that the subjects of them had been exposed to the same local causes of disease, as those were from whom they were supposed to receive it. Persons have visited their sick friends, have nursed them in their sickness, have watched with them, and mourned over them; and in their turn have taken the disease and died. The same thing has sometimes happened to those who have not entered the sick rooms, from only visiting the sickly

district. But on the other hand, when the sick are removed from the immediate circle in which they received the disease, do they carry with them the contagion, and spread sickness and death around them? If they do, let it be conceded that the yellow fever owes the extent of its ravages to its contagion; if they do not, we are warranted in the conclusion, that it is not a contagious disease. That they do not, is abundantly proved by the history of the disease, wherever its progress has been accurately detailed. Examples are very numerous of persons, who, after being exposed to the causes of yellow fever, have gone among their friends at a distance from those causes, and have had free intercourse with them, without communicating the disease to any one. In many instances, watering and other parties, which have been sent on shore from ships of war, without having any communication with sick persons on shore, have all been taken sick with yellow fever, after their return on board, and many of them have died, while no other person in the ship, although full of men, has been affected by it. Even when the sick are crowded together in hospitals, that are at a sufficient distance from the seat of the epidemic, they do not communicate the disease to their attendants. This has been abundantly proved in the hospitals established for yellow fever

patients in the vicinity of New-York and Philadelphia.”*

The writer of the letters to the Board of Health, not satisfied with advocating the contagious character of yellow fever only, has so far amplified the doctrine of contagion, as to entitle himself abundantly to become the great head and leader *even of the contagionists*. In one of the letters, from which we have already given some extracts, after asserting that the disease of which the Van Nests died “exhibited, throughout, the symptoms of *the bilious remittent fever*,” he proceeds, in the very next sentence, to inform the Board, that it was a continued fever ; we shall give his own words : “At all events, it has been uncommonly rapid in its progress, and is attended with an uncommon degree of malignancy ; and, as all *continued fevers* at this season of the year are liable *to be communicated*, I should recommend that measures be taken to have the apartments the sick have occupied, with their clothes, beds and bedding, immediately cleansed and ventilated.”† It evidently appears, from his own words, that remittent and continued fevers

* See 27th No. of North American Review, for a paper on contagion, and the fever of the last season.

† See Dr. Hosack's letter to the honourable P. A. Jay, Recorder, 5th September, 1819.

are one and the same thing, or that, in addition to the yellow fever being contagious, we have another contagious disease in the bilious remittent fever. How far the contagionists will thank this gentleman for so great a concession, we may imagine, after recollecting that this has long been one of the strong holds of their doctrine, under the protection of which they have valiantly held out against their opponents: for, whenever the yellow fever is proved not to be contagious, it is contended, by the *commercialists*,* to be only a remittent fever, and not the pestilence of yellow fever. This writer, however, seems determined that the yellow fever shall not escape the imputation of contagion; and therefore, lest it should by chance be proved to be nothing more than "bilious remittent fever, with an unusual degree of malignancy," to fasten, as soon as possible, the property of contagion upon the bilious remittent fever also, but which he has forgotten to introduce into his nosology, or has wisely delayed it, perhaps, until the next edition of that work, when we may also consistently look for the equally venerable doctrine of the contagious nature of intermittent fevers; and the further probability

* We ought rather, perhaps, to style them anticommercialists, for they are the deadliest foes of commerce.

of all diseases becoming contagious in the hot seasons of the year, however mild and free from contagion they may be during the winter. It is surely much to be wished, humanly speaking, that some, or all, of the other dreadful contagions, which have so long desolated large portions of the earth, in the course of their annual march, had been placed under the controlling government of similar laws, and had likewise been peremptorily ordered to kiss the icy rod of winter.

Nothing is easier than to impress the public with the idea of contagion ; the fear of sickness and of death is naturally associated with the law of self-preservation, and the mind readily yields its belief even to an imaginary principle of danger. Without meaning any insinuation, or to impeach the motives of the contagionists, we shall quote a paragraph from an excellent memoir, on the subject of contagion, by Dr. Potter, Professor of the Theory and Practice of Medicine in the University of Maryland, merely to show how foreign to the real nature of the subject are the incidents which sometimes determine the character of a disease in public estimation. The important bearing which it has upon our subject, and the lucid manner in which it is written, will furnish a sufficient excuse for its length :

“ Notwithstanding the epithet *contagious* had been employed, time immemorial, to signify almost every fever which could be contracted by being in the place where it prevailed, it never was applied, in a personal sense, to any general disease, except the plague and the eruptive fevers, till it was suggested by Hieronimus Fracastorius ; and no man, of a sound discriminating judgment, will decide, that his opinion was conscientiously expressed. Every circumstance connected with the case evinces a dereliction of principle in the author, the consequences of which are as deplorable, as its propagation has been general. This futile hypothesis was the offspring of a political incident, which originated in the conflicting interests of the rival potentates, Francis I. of France, and Philip V. of Germany. During the session of the memorable Council of Trent, in 1547, a spirit of dissension arose among the members of that august body : the question, whether the council should continue its session at Trent, or remove to the city of Bologna ? was warmly agitated ; and, for some time, the scale appeared to preponderate in favour of the former ; but the interest of Pope Paul III. finally prevailed, and the council was accordingly translated to the latter. While the issue of the controversy was doubtful, and the Pope considered the completion of his views as

problematical, among the various other means employed to ensure success, he found, and enlisted in his service, a zealous and ingenious advocate in Hieronimus Fracastorius, a popular physician at Bologna. It happened, that in the most critical period of the contest, a fever appeared at Trent, which, although it occasioned little or no alarm in others, the occurrence was eagerly embraced by the Doctor, and wielded as a most powerful engine against his antagonists, and in favour of the Pope's interest. This disease, which would seem from his own account to have been a common *typhoid* fever, was painted in the most terrific colours his imagination could invent, and made the basis of a work which represented it as *contagious* as the small-pox, one which none could approach with impunity. He represented it as having a peculiar attraction for noble blood, and thus struck a panic through the council, overwhelmed the emperors' delegates and the Spanish bishops, and thus the Pope's party triumphantly sat in council, in his own city of Bologna. This stratagem, though evidently a *ruse de guerre*, is a remarkable example of the incalculable consequences that sometimes flow from the most trivial incidents. The delegates to this illustrious council were no less dignified as philosophers than distinguished as theologians ; they were powerful as men, indepen-

dent of that influence with which their sacred characters clothed them ; but they were not *medical* philosophers. They returned home deeply infected with this *fatal* error, which has slain its thousands, and tens of thousands, and thus perpetuated it throughout Europe. Previous to the dissemination of this hypothesis, of febrile contagion from this prolific source, the nations of Europe knew no fears from the imaginary introduction of epidemic diseases, except the plague and the small-pox ; but it follows, as a necessary consequence to the propagation of such a sentiment, that these commercial impositions, under the several forms of *quarantine*, *lazarettos*, and *even banishment*, followed in the melancholy train of accumulated aggravation, and still continue, to the disgrace of civilized man, and often to the infinite embarrassment, and sometimes the ruin, of the enterprising and industrious merchant."

From this it would seem, that for the accomplishment of private views, religion has been made to consecrate the doctrinal errors of contagion ; and that the fears and credulity of mankind have subjected them, together with the commerce of the world, to the successive systems of futile and oppressive personal and naval quarantine. Such systems, when once established, are with difficulty abolished ; for they are countenanced and upheld by governments from a va-

riety of circumstances, and among others, for the purpose of providing for their favourites, and increasing the number of their dependants; and it has always been the interest of these to keep up the public delusion. Hence the clamorous advocates of *importation*, have oftentimes in this, and invariably in older and more corrupt governments, succeeded in obtaining health-office *appointments*; and by promoting the interests of needy expectants, volunteering their services in pursuit of contagion, and ready to distort or imagine facts, have kept alive the public inquietude.

It has been observed as somewhat curious of the doctrine of contagion, "that it should have been first authoritatively introduced and propagated by the Pope and the Inquisition, in the darkness of the sixteenth century; subsequently adopted and acted upon, first by the Venetian oligarchy, and afterwards successively by other despotic governments of Europe; and that it should be now upheld, in this country, as well as in other Christian communities, not by facts and arguments, but by an unusual and extraordinary concurrence of influences. It is a remarkable fact, in farther proof of the opposition, which, since the first promulgation of the doctrine, has been always made to free inquiry upon this subject, that in 1603, an order was issued by King

James I. "strictly prohibiting all ecclesiastics and others, from publishing an opinion that the plague was not infectious, or that it was a vain thing not to resort to the infected." And, within these twenty years, we find, that Don Rodriguez Armesto, an officer of the Spanish navy, and keeper of the royal observatory of the Isle of Leon, for having endeavoured to show that the epidemic of Cadiz, in 1800, depended upon atmospheric and local causes, was arrested on a charge of having diffused false, dangerous, and *seditionous* opinions, and compelled to subscribe a formal retraction of them, after his work had been licensed as usual, and although his conclusions were deduced principally from accurate meteorological observations. Many more facts of a similar description might be stated ; as the banishment, for instance, of one physician from Malaga, and another from Carthagená, for having avowed the same heretical opinions ; all tending to show how uniformly arbitrary power has been on the side of contagion, and the doctrine of contagion on the side of arbitrary power."*

We advert with regret, to these mortifying truths, and feel their humiliating application even to ourselves. Hereafter, when the doctrine of

* See specimens of systematic misrule by Charles Maclean, M.D. London, 1820.

contagion of yellow fever shall be completely exploded, we shall have frequent occasions to reflect with surprise and horror upon the circumstances of cruelty and inhumanity that have been suffered to take place, and have even been justified by an *enlightened, humane, and inquisitive* people, under the governing influence of the appalling doctrine of contagion. It is but a few days since our own city, by direction of its Board of Health, furnished an example of the inconsistent errors, and cruelties of infatuation, and false doctrine. Within a year after having been themselves the *avowed* witnesses of the non-contagiousness of yellow fever, have we quietly seen a fellow creature, and a stranger in our city, snatched from the bed of sickness, and hurried to the quarantine hospital, a distance of five or six miles; where, according to the doctrine of importation, the *contagion* of yellow fever exists throughout the season. Every plea of necessity was wanting to justify it even to ourselves, for the atmosphere of the sick man's residence, was declared to be *pure*, and it was publicly admitted that there was *no risk of its spreading*. Why then was he immersed in the quarantine atmosphere of *contagion*, and the dying moments of the man thus wantonly agitated? If it were by the advice of their medical council, it was an act of the most glaring inconsistency, after the very explicit

opinion he had already given ; and if it were done by the Board, independent of their official adviser, it was, to say the least, an unwarrantable stretch of power. It is no excuse that there was no other place to which he could be sent ; if such removals are necessary, other and more proper places *ought to be ever ready* for the reception of the sick ; for, agreeably to the principles of the contagionists, it is little less than burying one alive, to send him to the *pestilential* atmosphere of the quarantine ground. It certainly cannot be an innocent act, to send an individual sinking under disease, to such an atmosphere, if the risk to the city of New-York is so great, from persons *only clandestinely communicating* with that place, as to call for a penal statute to prevent it. Besides, there is a chance, and it is full as great as the risk of contagion, of a person being sent there who may not have the yellow fever, and who, if the doctrine of contagion be true, would thus be exposed to the imminent risk of contracting the disease. But a few days since, a sick person of the name of John C. Williams, was reported to the resident physician as having recently arrived from Philadelphia, whereupon he “immediately proceeded to the place designated, and found Mr. John C. Williams, who informed me that he had been just seized with a severe pain in his head, back, and limbs, attended with a sense of great

distress about the region of the stomach, together with giddiness and blindness, rendering him altogether incapable of walking. He further stated that he had arrived in the city from Philadelphia the day before, and had in a very unworthy manner, obtained admission into New-York by reporting himself from *Trenton*. *I instantly conveyed him* to the health office boat at White-hall, to be taken to the quarantine ground ;”* where it is said he neither carried the disease, nor contracted it ; and that he had not been in Philadelphia ;—on the 28th, the health officer reported that he had absconded.† As there may be persons hereafter, not so fortunate as to escape from the *contagion* of that place, if they should unluckily be sent to the quarantine, we would recommend to their attention, the train of symptoms which so rapidly translated this man to the marine hospital ; especially since it has been *publicly announced*, that others also have been as *unceremoniously* subjected to the same transportation, and obliged to forego an immediate return. “ In that case, Dr. Hosack consulted the security of the city, *which is committed to his care*, by sending Williams to the quarantine, as we understand he has

* See Dr. Hosack's letter to the Board of Health, August 25th, 1820.

† Williams it seems, was merely drunk, or as one of his townsmen has described him, had the blue fever, not the yellow.

done several others, *without waiting for the developement of the disease, or the causes from which it may have proceeded.*"*

We have already seen, that no unequivocal instance of the disease being propagated by contagion, had come to the knowledge of this, or any of the other Boards of Health, which reported the progress of the yellow fever during the last season; and we have also seen that the disease has been more than once mistaken by the *official medical organ* of the Board of Health of this city, who reported his immediate predecessor in the office, as having *confounded* the bilious remittent and the yellow fever; and who long since, charged another and very distinguished predecessor in the office, and one who it is admitted was profoundly skilled in that disease, with mistaking jaundice for yellow fever. If then the chances of mistaking the disease, are so much greater than the risk of contracting it in this city, by contagion, are we not bound to abolish the cruel practice of sending to the quarantine, a person who is suspected of having the yellow fever? since the probability of his not having it, far exceeds that of his communicating it, especially too, when we recollect the infinitely greater danger attendant upon exposure

* See the Evening Post of August 29th, 1820.

to the *permanent and concentrated contagion* of the quarantine ground, from whence that *unquestionable case of contagion* reached our city on the 13th September, 1819, and which was contracted "in the transaction of public business at the quarantine hospital, during the illness of the late health officer."*

The case to which we have alluded as having been sent to the quarantine ground, was reported on the 17th August, 1820. The person had recently arrived in this city from Philadelphia, and was ill at the corner of Broad and Front streets. The resident physician stated that "the patient is situated in an *airy apartment*, in a house very much *insulated*, and from which, with the precautions employed, the disease is not likely to be communicated. In all other respects, I am happy to add our city is unusually healthy."† And yet this harmless sick stranger was immediately conveyed with his bed, bedding, clothing, &c. to the hospital at quarantine, and on the next day a proclamation *was issued by the mayor, prohibiting for thirty days*, all manner of intercourse with the city of Philadelphia. In the course of ten days afterwards, however, at the instance of the

* See Dr. Hosack's letter to the Board of Health, dated 13th September, 1819; and also his letter of the 14th.

† See Dr. Hosack's letter to the Board of Health, 17th August, 1820.

good people of this city, who had already grown weary of the restrictive system, and were threatening to lose their temper, as well as patience, the term of non-intercourse was reduced to ten days. The official adviser of the Board, we presume, was consulted on both these occasions; for we can hardly suppose that they would turn away from the advice of one who has the undisputed power of sending people to the quarantine hospital, *that dreaded receptacle of contagion*, whether they have the yellow fever or not. The public "have no idea that a resident physician should stand speculating on the precise nature of the disease,"* since he has the power, and it is his duty, hit or miss, to pack it off at once; and such authority, if properly vested, might be respected in the body of the proclamation.

We have no doubt that a signal change is soon to take place in the health laws, and we expect it to arise out of the entire revolution of popular opinion, respecting the nature of yellow fever. We have carefully attended to the evidence of the importation of it into our city the last season, and after deliberately weighing the case of every vessel which has been charged with introducing it, we are not satisfied that the poi-

* See the Evening Post of 29th August, 1820, for an editorial article.

son of a specific disease, which cannot be generated in this climate, has found access to our city through our commercial connexions. On the contrary, we are compelled to yield our belief to the weightier evidence of its domestic origin, especially that which is derived from the last season, which, it appears to us, has been peculiarly auspicious to the growth of sound opinions and deductions, respecting its nature ; and hence we do not conceive that it can justly be considered an *atrocious libel* on the country, to advocate the possible formation of yellow fever in the climate of the United States. We do not hazard any thing in saying, that we are supported in these opinions by the concurrent belief of three-fourths of the medical profession of this continent, who have seen the disease or attended to the evidence of its origin, which our country has already furnished. We extract the following as expressive, it is believed, of the professional opinion in Boston on this subject :—" In many places where the yellow fever has appeared, there has not been the least evidence of its importation ; and, in most of them, the attempts to point out the time and manner of its importation have been incomplete and contradictory. How different is this from the progress of the small-pox, or any other disease which is avowedly contagious. This fever too, in temperate cli-

mates at least, prevails only after a series of such weather as is the most unfavourable to vigorous health, and generally begins in those parts of cities which, from their filthiness and want of ventilation, are peculiarly suited to the production of putrid exhalations. Neither is the progress of this fever, through a town, such as might be expected from a disease which is propagated only by contagion. The friends of those first affected, who are most ready to visit them in their sickness, are not likely to be limited to their immediate neighbours, but to reside in various sections of the town: in a contagious disease, therefore, we should expect to see new cases not only arising in different and distant places, but becoming themselves new centres of diseased circles, from which it is rapidly extended to many others. On the contrary, except in some towns in which, from their local situation, every part is equally exposed to the action of marsh effluvia, the yellow fever creeps from house to house, and from street to street, as the influence of the putrid exhalations which cause it, is gradually extended."* No instance has ever yet been adduced of the yellow fever extending itself beyond the suburbs of a city, excepting

* See North American Review.

where the deleterious effluvia of marshes and local filth, or the noxious influence of the season, has caused more extended and general sickness, and this occurring independent of any communication whatever with the diseased city or its inhabitants. The fact, also, of the disease disappearing, not gradually, but oftentimes abruptly, at the time of many persons labouring under its most aggravated forms, is an additional evidence of its non-contagious nature; for, were it contagious, it would not cease in this way, from the mere influence of temperature, but would continue to exert the property of communicating itself, till it ceased from the want of subjects on which to act; nor would it be possible to predict, with so much accuracy as is often done, the time of its disappearance, if it depended upon a *specific poison*, emanating from the persons of the sick.

Notwithstanding all the absurdities that have been uttered and printed, "respecting the inoculation of the atmosphere," the spark which alone is wanted to kindle the destructive pestilence, or "the occasional virulence of the contagion of yellow fever," the contagionists themselves, or at any rate, the *moderate and respectable* part of them, have admitted that the disease is not contagious in pure air, and ascribe it to the poison being too much *diluted* in the atmosphere; from whence it

follows, that it would be impossible to introduce it, however contagious it may be, if the condition of the atmosphere only be properly attended to; and if we live in a climate altogether incapable of generating it, *de novo*, it would not seem to be a difficult matter to preserve that sufficient degree of purity of atmosphere to render the contagion inert. To us there appears to be nothing falacious in this reasoning, but, on the contrary, it creates a strong presumption that the doctrine of contagion is untenable in respect to this disease; and if on the contrary it be true, it presents a remarkable anomaly in regard to the whole catalogue of known contagious diseases. For it certainly is not a little singular that this contagion, which is so often reputed to be exceedingly virulent, is so easily destroyed; to be so quickly rendered innocuous by dilution in a pure atmosphere, and yet to be so frequently transported to a great distance, as from one country to another; to be concealed, inactive and harmless, for weeks and months together, and then suddenly to manifest itself by the most destructive virulence—these are circumstances which, we confess, appear to us irreconcilable with the doctrine of contagion in its legitimate sense, or with the logical import of the word; and we are by no means disposed to consider it as a mere difference of opinion, in regard to the use of words

only ; but we view it as leading to very important practical distinctions, from which alone can an efficient and equitable code of health laws be deduced. If, after all the difference of opinion that has appeared on the subject, it should be found, that in those very places from whence we are so often supposed to derive it, and in what has been called the latitude of pestilence, the yellow fever is not considered by judicious, observing, and experienced physicians, to be a contagious disease ; would it not imply the delusion of fear, or an unreasonable stretch of belief, to admit that *out* of the latitude of pestilence, and in a country *incapable* of producing it, it should first become contagious ; this would be admitting that the diminished activity of the disease was the cause of its contagion. The non-contagiousness of yellow fever has long been contended for, by many of the most distinguished physicians of the West Indies ; and proselytes to this opinion are daily increasing, in the very birth places of yellow fever. In support of this assertion, we might adduce numerous authorities ; but shall content ourselves with the opinion of Dr. Le Fort, which has been formed partly from the yellow fever of the last season, and in one of the very places from whence it is said the fever was brought into Boston and New-York.

In a prize memoir on contagion, distinguished by the medical society of Paris, he included the yellow fever as a contagious disease; but since that time, having had an opportunity of seeing and treating it, he "became entirely convinced that it was *not contagious*," and derived his opinion from the following circumstances. 1st. "There is not one example of the yellow fever having been communicated *by contagion*, to any patient, convalescent, or person employed in the hospital of Fort Royal, (Martinique) where during one year, from July 1st, 1818, to July 1st, 1819, six hundred and sixty-seven persons have been treated for that complaint. 2dly. In many merchant vessels from France, which arrived at Fort Royal in the fall of 1819, several persons were attacked with the disease, without having had any connexion with the other vessels, and before they had communicated with the shore. 3dly. During the first six months of 1819, the yellow fever sporadically attacked the troops stationed in the town and arsenal at Fort St. Louis, and also the marines on board of merchant and government vessels, yet neither had had connexion with infected persons, nor did any of them communicate the disease to their comrades."*

* See New-York Medical Repository, for June 1820.

The judicious and sensible remarks of this physician, are entitled to peculiar consideration, from the circumstance of his acknowledged ability in Paris as a writer on contagion, and from his frank and candid confession, that a better knowledge and closer observation of the disease itself in the West Indies, have enabled him to forsake the errors of inexperience. He adds, "the numerous people who live between the tropics would also be subject to the yellow fever, if it was a contagious disease. They are exempt from it, because their moral and physical system is in harmony with the climate in which they were born; it is to that, and that only, they owe the privilege of exemption; and in the same way it is, that strangers, who have undergone a seasoning to the climate, (if I may be allowed the expression) weaken or blunt its influence. When they have spent some years in the colonies, they partake of the privilege of the natives; like them, they are generally exempt from the yellow fever. Such certainly would not be the case, if it was really a contagious disease; for I repeat, there is no general habit or mode of living which can prevent small pox, syphilis, and other contagious diseases." "I do not know any physicians worthy of the name, in the West Indies, who support or profess a contrary opinion. Dr. Peyre, formerly physician of the King at St. Domingo, and this

place, and Dr. Gaubert, now physician of the King at St. Pierre, do not believe in it; and those gentlemen have observed the disease for more than thirty years, on a pretty extensive theatre. Dr. Luzeau, who has been surgeon general of this colony five years, is equally convinced of its non-contagion," and again, "we should say that the question of the contagion of the yellow fever, which is yet pending in some foreign countries, is decided in this place."* With respect also, to Havanna, from which place we have so often been supposed to import the disease, we are enabled to give an extract from a letter of Dr. Frost, showing that in his opinion at least, the yellow fever is not contagious; he says, "I have been a resident practitioner of medicine in this city, (Havanna) and at Demarara, for fourteen years; I have been in the service of the United States navy as surgeon, one year of which time we were stationed on the coast of Surinam. At these different places, I have had many opportunities of making observations, as to the contagious character of the yellow fever; and I have never in a single instance been able to trace it, as originating from any communication with the sick, or from personal contact with another person sick of the

* See New-York Medical Repository, for June 1820.

same malady ; always ascribing its origin to local causes ; such as peculiarities of climate, miasms, &c."*

Having, therefore, as we believe, failed to discover the origin of our late epidemic, in the existence of yellow fever in the West Indies, and its importation to our own shores through the commercial intercourse of the countries, we have necessarily to look elsewhere for the sources of this calamity. After mature reflection, we find no other probable causes of it left for investigation, than those which have been denominated domestic ; and these have very properly been divided into those of a general, and such as are of a local nature. Under the first is comprehended that kind of climate, which from analogy, is now thought to be necessary for its production. It is admitted on all hands, to be the endemic of tropical climates, and that a certain degree of heat is essential to its appearance as an epidemic. It is asserted, and we believe with truth, that it never has appeared beyond the 46th degree of latitude, and that its occurrence even beyond the 40th degree of latitude, has always been associated with a continuance for some time, of a heat approximating very nearly the 80th degree of Fahrenheit's thermometer. This degree of heat alone,

* See New-York Medical Repository, for June 1820.

however, is not productive of yellow fever, for its appearance is not witnessed, or the spreading of it observed, if a case of it be accidentally or otherwise introduced, unless the causes of a local, are superadded to those of a general nature; with the precise intensity, variety, and nature of these local causes, we are not as yet by any means acquainted; but, we have a strong presumptive proof, that all of them partake more or less of the miasmatic character; and that some of them are strong concentrated exhalations, nearly allied to those which produce the ordinary remittent fevers. How far it is requisite that they should be complicated with the agency of adventitious or accidental matters, or modified by the alternate influences of heat and moisture, and certain vicissitudes in the temperature of day and night, we cannot now determine; but we have little doubt, that as the attention of physicians shall be turned from the illusory researches on the subject of contagion, and more sedulously bestowed on the miasmatic origin of yellow fever, as developed by the agency of solar heat, and meteoric influences, that we shall look back on the obsolete doctrine of its contagion, with surprise, that it should so long have kept possession of the mind, to the exclusion of more philosophic principles of knowledge. Then too, will the doctrine of importation, with the present system of quaran-

tine regulations, be viewed as the melancholy monument of blind infatuation; as the removal of the council of Trent to the city of Bologna, is now, of the doctrinal errors of the contagiousness of fevers.

We have already noticed the boundaries of what was called the infected district, as indicated by the Board of Health, including Old-slip, and the parts adjacent. From Coenties-slip to the Coffee-house, and from Water-street to South-street, both inclusive, is principally made ground. It is in the recollection of persons, now resident in this city, that the tide waters of the east river reached nearly to Wall-street, and what was formerly the old ferry-house, is still to be seen in Broad-street, above Garden-street, and what was called Hanover-square, at the foot of William-street, was near the edge of the water. Great and Little Dock streets were parts of Pearl-street, and were the artificial margin of the East River, composed of logs, and promiscuously filled with every variety of materials. The progressive improvement of this part of the city has, in this way, formed a large proportion of Water, Front, and South streets. All this part is closely built up; many of the buildings are of wood, and are now much decayed; if the houses have yards, they are principally small, and all of them surrounded by wooden fences, and many

of these have long been in a state of decay. The surfaces of the yards, thus formed of an artificial soil, are exposed, with all the decaying materials of their inclosures, and the accumulating deposits, to the direct and reflected rays of the sun, and are excluded, by their situations, from the the natural agitations of the air. Very few of the houses, even in Pearl-street, within this district, have the means of carrying off the surplus or refuse water from the rear, excepting by troughs, which, in a great number of instances, pass through the cellars of houses in Water-street: these troughs are formed of wood, in some instances close, and in others open, running along the bottom of the cellars, or at an intermediate distance from the floor and the ceiling, according to the declivity of the ground: these become occasionally choaked, and are dripping or bursting, in a number of instances, in the houses themselves, or within a small distance of them. We have seen several of these troughs meeting in the cellar of a single house, situated within a few feet of the kitchen, sitting-room, and work-shop of a respectable tradesman, who has informed us, that they were extremely offensive as early as the month of April, and frequently, in warm weather, almost intolerable. The yards of many of the houses in Pearl-street are also extremely small, and unpaved, and sur-

rounded by wooden fences, which are successively going to decay ; the ground exhibits a black mould, interspersed with a variety of matters, and exposed to that degree of heat which eventually causes decomposition and putrefaction. These troughs communicate with a large well, or with a sewer, running through the centre of Water-street, westerly, until it intersects a spacious sewer leading from Pearl-street down through the centre of Old-slip, terminating in the west corner of the slip ; this end of it is visible at low water, as are also the corners of the slip, exposing a large quantity of filth to the sun, and causing a most noisome smell. At the junction of Old-slip with Pearl-street, near the other extremity of it, there was formerly an iron grating, from which such an offensive odour issued, that twenty years ago it was ordered to be covered closely with a flat stone, which has not been removed or taken up since that time ; and it is said that the two persons, employed in altering the opening, and adjusting the stone, were taken sick. With this main sewer, there is communicating, from different streets and houses, a number of smaller ones. Over a part, and through almost the whole of this artificial section of the town, the tide occasionally washes or penetrates, and in cellars of some depth, the water appears in quantity, at the distance of several streets from

the river ; indeed, at certain tides, this quarter of the town is in some measure inundated : one of these tides occurred during the last season, towards the close of the fever, and obliged the Board of Health to adopt “ subsidiary measures, for emptying the cellars that were filled with water by the violent storm, and unusual tide, which occurred in September.”* The virulence of the exhalations, causing yellow fever, appear, however, to have been almost entirely confined to a small part of that district, situated on the west side of the slip, between Water and Front streets, and covered principally with old wooden buildings, that have long been in a decaying state ; these houses are destitute of yards, have small and close cellars, where are deposited a variety of articles more or less susceptible of decomposition, and exposed to the occasional influence of the tides : some of these houses are frequently occupied by a number of families, or resorted to by sailors, foreigners, and others, in the lower class of life, in quest of board and lodging, and the indulgence of dissipation and intemperance ; they face the east, and receive the stagnant air and noisome smell of the slip and basin ; while, from beneath the houses,

* See report of Board of Health, 25th October, 1819.

there issues an effluvia perceptible to persons above. This block of houses is also situated over, or adjoining to what was formerly called *rotten row*, in consequence, it is said, of sixteen or twenty Dutch ships, which had been engaged in contraband trade, having rotted and sunk here, pending a decision in the court of admiralty. By means of strong timbers, it is reported that houses were erected upon, and close to these vessels, and the intermediate spaces became finally filled with an indiscriminate deposit of all kinds of rubbish, offal, and corruptible substances. Large timbers, supposed to be the remains of some of these vessels, are now frequently met with in digging new cellars; and so loose, wet, and unsettled is the ground, that, in erecting new walls, they are made to rest on timber or plank, for the purpose of obtaining greater uniformity of settling. In some parts of this district, the contents of privies, after long and heavy rains, have been observed to filter through the earth, and become perceptible, even to the eye, in the adjoining cellar.

It appears from "a statement, &c. of the malignant yellow fever of 1819, by Dr. Pascalis," that "out of fifty-seven cases which occurred in the vicinity of Old-slip," more than thirty originated in the block of houses already alluded to, and within a few hundred yards only of Mrs.

Kavanaugh's house. The most of those who sickened and died, after removal to Fort Richmond on Staten Island, were from this block, as were those also, who were sent to Fort Stevens on Long Island. In the opposite block, on the same side of the slip, and to the north of Water-street, eight or nine persons were attacked, to the most of whom it proved fatal; at this time, public alarm had attained its greatest height, owing in part, to the characters of some of the individuals who had fallen victims to the disease. The remainder of the cases occurred in different parts of the made ground of this district, or in situations exposed to unwholesome exhalations from damp cellars, ill ventilated yards, and houses, and sewers, and troughs for the carrying off waste water, &c. It will probably be admitted, that a sufficient number of local circumstances existed within this district, to cause impurities in the atmosphere, and to injure the health, if good air be necessary to health; and to produce disease, if a contaminated or impure atmosphere is ever productive of such effect. That the air was polluted and offensive, is now a matter of notoriety, as is evident from the fact, that the Old-slip was included with some other places, and *presented as nuisances by the grand jury* of this city on the 18th September, *three weeks* after the first appearance of yellow fever; they remarked, "that

while such *prolific sources of fevers* are suffered to exist, no precautionary measures for the health of the city can be efficacious in preventing disease, or in arresting its progress." We have already stated that previous to the appearance of the fever, both the duration and degree of heat had been unusually great, and that the last three or four weekly bills of mortality, showed a great increase in the number of deaths. We have understood that some weeks prior to the death of Mrs. Kavanaugh, several persons were suddenly seized with violent sickness, and died with affections of the head after a short illness; and that these persons resided at, or in the immediate vicinity of Old-slip, or were in the daily habit of visiting that place.

We have been informed by Dr. F. U. Johnston, late house physician of the New-York hospital, that from the 22d June to the 5th July, of the present year, 1820, a number of persons had sickened in a building No. 23 Old-slip—seven of them were received into the New-York hospital, and there cured. Of these, six were affected with mild grades of the bilious remittent fever, and one with a severe form of that disease. Dr. Johnston was informed by the woman of the house, that several other persons were taken sick about the same time, and removed from the house to different parts of the city. It was in this building

that Mrs. Kavenaugh sickened, in 1819, and died on the 29th August, after a few days illness. This, it is believed, was the first case of yellow fever, though not reported to the Board of Health, that attracted particular attention the last season.

The general mortality of the disease of 1819, does not appear to have been as great as in former seasons of the yellow fever. The first ten or twelve cases, however, proved fatal, and excited sufficient alarm to cause the desertion of the district, either voluntarily or by direction of the Board of Health; by which means, there was not only a stop put to the growth of nuisances, and the accumulation of impurities, but an actual diminution in the offensiveness of the effluvia, from the freer circulation of air, and the means employed to purify the proscribed district; hence we perceive the reason why the disease did not extend beyond the barriers erected by the Board of Health. The committee in their report to the Medical Society of this city, very pertinently ask, "if it," the imported contagion, "was retained in the clothes, so as to have been communicated by washing, why was it not imparted to those who handled them, or were on board of the infected vessel?" and again, "why did the fever continue to prevail in Old-slip, after these vessels were removed? Why was it restricted to such narrow limits? Why did it not surmount the

bounds erected by the Board of Health, and diffuse its contagious pestilence over the whole population of the city? These queries present difficulties which we cannot reconcile with the theory of exclusive importation."

Had the inhabitants been allowed to remain, and no measures of cleanliness been resorted to, this district, it is probable, would have been a scene of the most dreadful pestilence, and in addition to the number of its immediate residents, who probably would have sunk under it, the growing influence of its destructive atmosphere would have been felt at a much greater distance; and *the atmospheric poison* would have been confounded, in the public mind, with the extension of the disease by *contagion*. The Board of Health, therefore, in addition to the credit of active benevolence, deserve that of having contributed very largely by their measures, to establish the important question of the *non-contagiousness* of yellow fever. As the season advanced, and the district became purified, the malignancy of the disease "abated, and recoveries became less rare;" and the Board of Health add, that "it may be worthy of remark, that of the sick removed to Fort Stevens, notwithstanding the fatigue of their removal, a greater proportion recovered than of those who remained in the city; of thirteen sent there, seven died, and six

recovered." From the 1st of September, to the 13th October, the time of its disappearance, upwards of seventy cases of yellow fever occurred, some of which were not reported to the Board of Health, and about fifty of them terminated fatally.

Symptoms of great reaction or high excitement, succeeding to a state of depression, were frequently observed in the late fever of this city, as also in that of Boston and Baltimore, and occasionally to such a degree as to call for the use of the lancet. When employed early, it appeared to moderate the violence of the febrile symptoms, and to lessen the severity of local pains. In some cases in this city, twenty ounces were taken with advantage. The application of cupping glasses, to the temples and back of the neck, relieved the pain of the head, and intolerance of light, and diminished the redness of the face and eyes. In Boston we observe, "that blood-letting was requisite in the majority of cases; but in some instances, evacuations from the alimentary canal were alone admissible;"* and "repeated venesection became necessary,"† oftentimes in Baltimore, and occasionally in

* See New-England Journal of Medicine and Surgery, for Oct. 1819.

† See the American Medical Recorder, for April 1820.

Charleston. In the latter place, however, many physicians early laid aside the use of the lancet, in consequence of its not being successful to the extent formerly used, and in some instances appearing to be injurious. We have been informed that bleeding was often resorted to early in the disease which prevailed the same season at Havanna, excepting in those cases where a discharge of bilious matter, from the bowels, spontaneously occurred; this was allowed to continue, and was encouraged with advantage to the sick. The remedies which appear to have been the most successful in the treatment of this fever, in every place where it appeared in our country the last season, are cathartics, and not unfrequently those of the most active character, on account of the torpor of the bowels, which was sometimes observed to be very obstinate, requiring the frequent repetition of large doses to produce any effect, while at other times they appeared to act with nearly their usual certainty. The irritability of the stomach would, in some instances, cease altogether, after the operation of a powerful purgative; and if early administered, it would sometimes happen that the restlessness, pain of the head, back, and limbs, would subside, the complete development of the disease would appear to be prevented, and something

like an intermission would take place, or a train of symptoms followed resembling an ordinary remittent fever. The continued use of these remedies, for several days in succession, adapted to the condition of the bowels, and other symptoms, often removed the disease. The cathartics, most commonly employed in this city, were large doses of calomel and jalap; the various saline purgatives, rhubarb and magnesia, or rhubarb and carbonate of potash or soda: great success attended the use of this last remedy at Fort Stevens, in conjunction with wine whey, Virginia snake-root street, &c. and the undiluted compound tincture of bark, given frequently, in the quantity of a teaspoonful at a time, was observed to compose the irritability of the stomach. Although these latter mild remedies acted with sufficient quickness and efficiency at that place, they were supposed to be altogether inadequate in the city, where much stronger medicines were frequently given, and repeated several times before the bowels were moved: the symptoms were more or less dangerous, and increased in violence, in proportion to the degree and duration of the torpor of those organs.

We have been informed by Dr. Campbell, that the practice which he believes to be most successful in Charleston, consists of "active doses of calomel and jalap, continued until the patient

is well evacuated, succeeded by small doses of calomel to produce an alterative effect on the liver, which appears to be the organ most concerned in this disease." This is accompanied by local applications of an irritating nature, such as blisters, sinapisms, hartshorn, and rubifacients to the stomach, head, and extremities, and generally at, or near to the seat of pain, wherever it may be located. These were often found to remove the soreness and irritability of the stomach, and obviated, it is thought, the accession of black vomit. All unite in recommending these remedies, as calculated also to remove the affections of the head, for which purpose, cold water has likewise been employed, especially to remove the delirium. This was in some cases an extremely grateful application to the whole surface of the body, when affected, as was sometimes the case, with a most distressing, pungent, and burning heat; an abatement of the thirst, headach, and pains of the bones, with a more natural sleep followed, and in some there was an evident tendency to perspiration, in consequence of its employment. We are told that "cold applications externally, and vesication, were highly beneficial at different stages"* of this disease in Boston, and the same remark is made by Drs. Campbell and Irvine of the disease

* See New-England Journal of Medicine and Surgery.

of Charleston. After the bowels were freely opened, hot lemonade, with Henry's calcined magnesia, lime water and milk, lime water magnesia and laudanum, citrates of ammonia, soda and potash, with aromatics, and small quantities of cold drinks, were found most successful in quieting the stomach.

With regard to the use of emetics, a difference of opinion appears to exist among physicians of the same place, as well as of the different places of our country where the disease appeared in 1819. By some they are considered as always doubtful in their effects, and sometimes decidedly injurious; while others have commended them as valuable remedies if early administered. This difference of opinion may be owing to the different periods of the disease at which they have been employed, a few hours only being sufficient to cause a remarkable change in the state of the disease. Dr. Irvine contends, that if mild emetics are selected, and resorted to early, they prove serviceable by unloading the stomach of its bilious and vitiated contents, which if suffered to remain, may increase the irritability of that organ; and in Boston we learn that "most of the patients had irritable stomachs, and it was requisite to limit them as to the quantity of their drinks. This difficulty was not augmented, however, but rather *prevented*, by the use of emetics at the

commencement.”* As yet, but little experience has been had here of this remedy, and we cannot learn that any of the physicians of this city had immediate recourse to it, though the effect of vomiting was not unfrequently produced by the nauseating purgatives employed, and which were at times intentionally rendered still more nauseating, by additions of small portions of antimonial and other emetic medicines. We are inclined to place much confidence in these mixed purgatives, consisting in part of calomel, given on the invasion of the disease, or as soon after as possible. In this city, generally speaking, the antiphlogistic plan of treatment was adopted, and for the most part enforced throughout the disease. The most beneficial of all the evacuant measures resorted to, were those of a cathartic nature ; it is questionable, perhaps, if any benefit was derived from the use of sudorifics, any further than those of the class of agreeable diluents, of saline and effervescing draughts, might serve to quench thirst, and allay the consequent restlessness and irritation of the skin. As the disease advanced, stimulants and cordial nourishment became necessary, but we believe that this was the case in a very few instances only ; for we have understood that

* See New-England Journal of Medicine and Surgery.

symptoms of high febrile excitement, calling for the repetition of evacuants, sometimes followed the eating of a small quantity only of animal food. "Opiates often gave great relief" in the fever of Fort Hill in Boston, "but it was sufficient to give very small doses." After the bowels were freely opened, and the febrile heat had subsided, anodyne remedies were found elsewhere also, to be particularly serviceable in promoting a free and pleasant state of skin, in quieting the peculiar irritations of the system, and in procuring comfortable rest. We recommend, as particularly deserving of attention, the strong condemnation of the mercurial plan of treatment, so earnestly set forth by Dr. Irvine. He does not appear to object to the use of mercury as a cathartic, although he decidedly prefers the occasional use of saline purgatives. It is the sialagogue effects of that mineral which he reprobates, being oftentimes difficult to excite, even when given very freely, and when produced, being inadequate to the removal of the disease; its effects taking place, according to the opinions which have lately been advanced by several physicians in Great Britain, rather in consequence of the subsidence of morbid action, than as the cause of the decrease of that action. We have long since acquiesced in the truth of these opinions, and believe that the irritable stomachs of yellow fever patients are

aggravated by the employment of that remedy, except when given with a view to its peculiar cathartic properties, and its influence in correcting morbid secretions, all of which may be obtained exclusive of any effect upon the salivary glands, or irritation of the stomach. He remarks that "bark, wine, and stimulants of all kinds do infinite harm,"* and that after trying the plans of *mercurialization* and *super-venesection*, and failing with both, as might reasonably have been expected at this day, he had recourse to a method which he now approves and recommends; consisting as we have noticed, of emetics in the early stage, the occasional and very cautious use of saline purgatives, the application of blisters and irritants to the skin, taking care not to irritate the stomach; and in the second stage, when that organ becomes irritable, to quiet it by giving two or three grains of sugar of lead uncombined, every two or three hours; increasing or diminishing the doses, and the intervals of their administration, according to the circumstances of the patient. Dr. Campbell writes, that "a practice has been introduced by my friend and preceptor, Dr. Benjamin B. Simmons, which promises to be very successful. It is to establish an action which diverts from the stomach, and *in every instance* in which

* See Irvine's Treatise on the Yellow Fever of Charleston.

this local action has been produced, the patients have recovered. Immediately after the patient has been well evacuated, he gives small doses of calomel, with a quarter of a grain of powdered cantharides every two hours, until a strangury is produced, while at the same time, the mercury has a chance of exciting another part of the system. It is surprising how completely the stomach is relieved when this action is produced, and how readily it receives and retains such things as are administered. In my own case, and in several that I saw, this plan of treatment was pursued, and with the happiest success. I have known as many as eight grains of cantharides to be given before the proper effect was produced. Unless the strangury is intolerable, no attempt should be made to check it. I am inclined to think that this fact is highly worthy of your attention, as it will no doubt be found by further experience to be a valuable remedy."

That nuisances and deleterious matters may be brought in vessels to our wharves, and add so much to the existing impurity of the air as to engender fatal forms of disease; and also that, even independent of the existence of a directly noxious atmosphere in our slips, vessels may arrive in so foul a state as to communicate disease to all those who may visit them, though the

vessels may not have come from places where the yellow fever has prevailed, has long been contended for by physicians, both here and elsewhere, as decidedly as they have opposed the commonly received doctrine of the importation of the *contagion of yellow fever*. With this view of the subject, and which we believe to be correct, the causes of yellow fever may be as strictly local on shipboard, as in the filthy docks and streets of a city ; and if it be correct, it must suggest new regulations for the preservation of the public health, instead of abolishing quarantine laws altogether, which the contagionists have falsely argued would be the result of surrendering the doctrine of contagion. The truth of this assertion, however, is fortunately maintained by as little unequivocal proof as is the doctrine of contagion itself.

It has been the studied policy of the contagionists, to misrepresent the views of their opponents, and as they were aware of the great reliance of the public on the enforcement of quarantine laws, for the preservation of the health of commercial cities, they have artfully endeavoured to establish the belief that their opponents intended to abolish the whole system of quarantine, and thus to expose the community to danger from the introduction of disease. The non-contagionists having proved that there was no danger of the yellow

fever being communicated by the sick, and consequently none whatever to be apprehended from persons who were not ill of that disease, argue, and we think correctly, that the quarantine laws are predicated upon the supposition of a thing which has no existence, and must, therefore, be inadequate to the prevention of a disease which is otherwise contracted; whereas, if they had been founded upon the principle which is conceived to be abundantly established, of uncleanly and foul vessels being capable of engendering malignant diseases, modified by the character of the season, an efficient system would have been formed, without the necessity of its including a personal quarantine, that now serves to keep alive an erroneous idea of danger, the consequences of which, are oftentimes shocking to humanity. We shall here advert to the language of a very able and decided advocate of the domestic origin of yellow fever, and see how far it is from contemplating the removal of quarantine laws.

“The only object to which the restrictions of quarantine are now applied, is to guard against the introduction of disease by contagion. We have seen that the principal object to which they ought to be applied, is to prevent the introduction of noxious matter from vessels or their cargoes, which are in a foul and unhealthy state.

The application of quarantine laws, ought not, therefore, to be regulated in reference to the *places* from which vessels arrive, but by the *state* in which they arrive. There is no cause for detaining a ship, on account of the danger of yellow fever, which is itself in a pure and healthful state, from whatever port she may have sailed, nor however sickly that place may have been. On the other hand, no ship that is foul and offensive, or that has a cargo in a putrid state, although the place from which she sailed, or the persons on board *be ever so free from sickness*, ought to be permitted to approach the town, until she has been thoroughly cleansed and purified. Yet in this case, there is no good reason for detaining the passengers and crew in quarantine. Whatever danger they may have incurred of being attacked by disease, even after they leave the ship, there is no fear of their transmitting the danger to others. The precautions against infection from the impurities of vessels, and the putrefaction of the perishable parts of their cargoes, ought not to be limited to the restraints at quarantine. Notwithstanding the utmost vigilance of health officers, vessels will sometimes be permitted to pass without suspicion, whose cargoes, or some parts of them, are in a state liable to produce disease; or by a long detention on board, some articles may

have become putrid after having passed a sufficient examination at quarantine. There ought, therefore, to be a rigorous system of inspection, during the summer and autumn, into the state of every ship which has a cargo of a perishable nature, while she is discharging. In this manner, the danger, when it exists, will be detected, before it can have extended to any considerable number of persons, and will be promptly removed.”*

The great length of this article, prevents us from inserting the whole of the excellent observations of this writer on the subject of quarantine laws. We must content ourselves with recommending them to the attention of every Board of Health in the United States, as the outline of an infinitely more efficient system than has ever yet been adopted.

The other means of prevention consist of filling up the slips with wholesome materials to beyond low water mark, facing as many of the docks in that part of the city, as is practicable, with square stone, similar to the docks of Great Britain, which should be so executed as to preclude the admission of the tide waters through the present soil into the cellars of houses and stores; the clearing of foul, damp cellars, and filling

* See North American Review, No. 27.

them up to a sufficient height with good sand or gravel; cleansing and filling up old cisterns and wells; scraping the yards, and covering them with paving or flagging stones; the removal of old decayed fences and timber, and pulling down the already mouldering remains of some wooden buildings, so as to give a freer circulation of air to those spots which are now very much confined, or almost entirely fanned by the atmosphere of the slips; keeping the sewers clear, improving the present discharge of waste water from Pearl to Water-street, and elsewhere; the frequent inspection of houses; the washing of the streets, and preventing too many vessels from entering the slips, or approaching the wharves; and in the formation of artificial ground, to avoid the use of putrescent materials, by the exclusive employment of sand or gravel. We do not entertain a doubt that these measures would prevent a recurrence of the disease as an epidemic in any part of our city.

FURTHER REMARKS
ON THE
CASE OF LIGATURE
OF THE
ARTERIA INNOMINATA.

BY VALENTINE MOTT, M.D.

IN my first communication of this case, in the Hospital Register for 1818, it is stated page 50, that "*the subclavian artery internally and externally to the disease, was pervious.*" To this it may now be added, that where this artery opens into the ulcer, left from the wound of the operation, it appears not only pervious, but of the natural size, and the coats free from any diseased appearance. Externally towards the axilla, the artery is somewhat enlarged in diameter, but exhibits no appearance of disorganization of its coats, either externally or internally. About an inch from the ulcer, or just as the artery has passed between the scaleni muscles, there is an irregularly shaped elliptical opening upon its upper side, large enough to receive the extremity of the forefinger. The edges of this opening are jagged

and uneven, and the surface of the artery internally, is of a brownish yellow colour, to the extent of half an inch on the inside of the opening, and more than an inch towards the axilla. The internal coat of the artery has a rugous or puckered appearance; separated a little from the muscular coat, very friable and evidently in a degenerated state. This opening of the artery, communicates directly with the anterior extremity of the sac which contains coagula, and upon removing these, the surface of the sac is seen puckered or thrown into a great number of little folds, giving it at first sight, the appearance of containing a number of holes. This account is taken from the morbid parts before me, and the preparation has been seen and examined by Dr. Post, Dr. Hosack, Dr. Stevens, Dr. Watts, and others, who have authorized me to state that they are satisfied as to the nature of the case.

TWO CASES
OF
UNUNITED FRACTURES,
SUCCESSFULLY TREATED

BY
SETON.

BY VALENTINE MOTT, M.D.

CASE I.

STEPHEN HAMMOND, aged about thirty-five years, was admitted into the hospital with lameness, in consequence of a fracture of the leg about seven months since. Upon examination, the tibia was found ununited, and to admit of very free motion between its ends. The fibula was entire, and the patient believed it never had been broken. From the account which he gave, it appeared that he had been subjected to the proper treatment for the restoration of a broken bone, but he stated that it never showed any disposition to unite, under the course which was pursued.

As his general health was not good, he was put upon tonic medicines and invigorating diet, and

I directed that a stimulating plaster of gum ammoniac and mercury should be applied over the part, with the many-tailed bandage; and splints to reach above the knee and below the ankle, and to be very firmly secured; and I advised him to walk upon it with the assistance of his crutches, as much as the pain would any way permit, informing him that the object in wishing this exercise, was to inflame and irritate the ends of the bone; and that he must not desist, even though considerable pain should accompany it. This was persevered in for several weeks, but finding little or no pain to attend it, and no appearance of inflammation in or about the fracture, and no hope of amendment, it was discontinued. Blisters were next repeatedly tried, but to no purpose. Very powerful shocks of electricity also, were passed in different directions through the part, but they produced no beneficial effects.

A seton was next introduced: this I did by making a small incision upon the outside of the tibia, down to the fractured ends, then passing between the bones the stillette of a small trocar, and pushing it out on the opposite side, the seton was readily introduced with an eyed probe.

In a few days considerable inflammation and pain supervened, which required emollient poultices and the antiphlogistic treatment to subdue. This was soon followed by a copious discharge

of matter from the seton, and a collection of pus on the anterior part of the tibia, which was evacuated by a small incision. After five or six weeks, he became sensible of an increase of firmness in the leg, and from this time he was directed to diminish the size of the seton one thread every other day, until it was all removed. It continued to grow stronger every day, and in a short time after the wounds healed, he was permitted to walk a little upon it, when splinted and tightly bandaged, and in about three months the bone was firmly united.

CASE II.

JOHN SMITH, aged forty-one years, became a patient in the hospital in 1819, in consequence of an ununited fracture of the thigh bone, of twelve months standing. It occurred at sea, and at the same time several of his ribs were fractured. Thirty-six days after the accident, he arrived at Halifax, without having had any attention paid to the adjustment of the bones. After his arrival he states, that little notice was taken of his thigh, and no attempt was made to reduce it. He recovered without difficulty from the fracture of his ribs. The several means mentioned in case I. were

tried, but without benefit. The limb was considerably shortened from the obliquity of the fracture, and ends of the bone overlapping. No advantage attending the use of the means referred to, a seton was recommended. In the introduction of this, much more difficulty was experienced, than in the case of Hammond.

An incision was made on the inside of the thigh, a little to the outerside of the artery, so as to come down upon the centre of the ends of the bones, where they overlapped. The stilette was then attempted to be passed between the bones, but this was found altogether impracticable, from their very close contact, even though the limb was changed from one position to another. Instruments of different sizes were resorted to, but they could only be made to pass a very small distance. A gimblet was tried, but very little progress could be made. Having provided for the occasion a *carpenter's bit*, about the size of a large trocar, I found with this, a passage could be made with the greatest facility. Then by making an incision down to the end of the instrument, on the outside of the thigh, a large seton was readily conveyed through between the bones, by means of a long eyed probe.

After the expiration of three months, the thigh becoming firmer, and much less motion being felt between the ends of the fracture, he was per-

mitted gradually to lessen the size of the seton. The firmness continued regularly to increase, but it was not until after eight months had elapsed, that the thigh had acquired sufficient firmness to enable him to support the weight of his body, by the aid of a crutch.

It is now more than twelve months since the seton was introduced, and the bone appears to be firmly united. The shortening of the limb does not exceed three inches and a half.

A third case came under my care in the hospital, of an ununited os brachii, of several months standing. A seton was readily passed between the ends of the bone by the stillette and eyed probe, but the result of it cannot be stated, as the man left the hospital a week or two after the operation was performed. From the good health of the patient, however, there is every probability that it answered the same salutary purpose, as in the other cases.

A CASE
IN WHICH THE
RIGHT CAROTID ARTERY

WAS TIED FOR THE SAFE REMOVAL

OF A

TUMOUR.

BY VALENTINE MOTT, M.D.

JOHN M'GARRIGLE, born in Ireland, aged forty-nine years, a mason by occupation, was admitted into the New-York hospital on the 10th of November, 1818, for a carcinomatous fungus.

The fungus was situated upon the right side of the face and neck, and occupied a considerable portion of each. It extended from the inferior lobe of the ear nearly to the chin, and downward to a horizontal line, passing through the inferior edge of the thyroid cartilage.

It projected downward and forward, to the extent of about four inches.

At its most prominent part, there was an opening, nearly circular in its form, and about one and half inches in diameter; gradually diminishing

as it extended through the fungus, and terminated just within the margin of the inferior maxillary bone.

The edges were everted, and studded round with clusters of fungous excrescences, varying in size, from that of a pea to a marble; of a pale red colour, of a granulated appearance; extremely flabby in their structure, and bleeding upon the slightest touch.

From its cavity, there was a constant discharge of a thin acrid fluid, amounting to about a pint in twenty-four hours; extremely offensive, and excoriating the surface with which it happened to come in contact.

He seems to have been originally, a man of a strong and vigorous constitution, but at the time of his admission, it had suffered much from the disease. His countenance was pale; pulse feeble; he had no appetite, and his whole appearance evinced the utmost languor and depression.

About eight months previous to the appearance of this tumor, he had been cured of an ulcer situated on his lower lip, that had troubled him more than two years. He says it resembled a wart, that at times, it gave him severe pain, and that he had tried various applications without deriving any benefit until a cancer doctor gave him a "burning plaster," which brought out the core and then it soon got well.

The patient ascribes the origin of his disease, to a severe tooth-ache, which was attended with a swelling of that side of his face in April last. When the swelling subsided, he discovered a small moveable tumor very little larger than a pea, immediately under the margin of the lower jaw. It remained nearly stationary for two months, giving him but little pain and no inconvenience. It then began to swell and became troublesome; the pain was severe, and of that peculiar kind which characterizes carcinoma. He was advised by his physician to apply poultices, which were continued for five or six weeks. The tumour was then punctured with a lancet. A little bloody serum alone flowed from the puncture.

Shortly after this, the tumour began to increase with more rapidity, two other openings formed spontaneously, which soon communicated with the first, making the large circular opening before described.

In consultation it was agreed, that an operation which would lessen the flow of blood to the fungus, and permit as much of the tumour to be removed as possible, afforded the only possible means of prolonging the existence of the patient, or of mitigating his sufferings. With these views, I accordingly performed the following operation, on the 14th day of November, at 12 o'clock.

The right carotid was taken up about an inch below the cricoid cartilage, and secured by two ligatures, but not divided in the interspace, in consequence of the depth of the artery, from the swelling of all the parts around the disease. Such was the enlarged size of the vessels, that it became necessary to take up several arteries and veins before the carotid could be exposed.

The tumour was removed by an incision commencing at the ear, opposite the meatus auditorius, and carried obliquely downward and forward, so that it passed over the base of the lower jaw near the chin—passed under the chin and terminated upon the outer edge of the anterior belly of the left digastric muscle. From thence downward to the thyroid cartilage, along the lower edge of this, across the sterno mastoid muscle, and terminated about an inch behind the mastoid process of the temporal bone, upon the os occipitis. Another incision from the termination of this, passed along under the ear to meet the commencement of the first. (See dotted line in plate I.)

The tumour was now dissected from the parts beneath, beginning opposite the thyroid cartilage, so as to detach the lower part first, in order not to have the dissection obscured by the flow of blood. In this way, the operation was carefully continued until the base of the jaw was exposed,

Pl. I.



then separating the cheek from above downwards, the morbid mass was removed. The jaw bone was denuded to the extent of about an inch, near the posterior angle, but only slightly carious. In this operation, almost the whole of the digastric muscle, anteriorly and posteriorly, all the sub-maxillary gland, part of the mylo-hyoideus, and stylo-hyoideus muscles were removed. The venous hemorrhage was very great from the large size of the veins, which returned the blood from the tumour; they were visible upon the surface of the tumour. Only three arteries were divided; the labial, and two smaller branches; one appeared to be a branch of the superior thyroidal, and the other of the occipital. They bled very little.

The operations occupied about one hour and fifteen minutes, and the patient lost perhaps nearly thirty ounces of blood, mostly venous.

6 P. M.—The patient is somewhat exhausted by the loss of blood, and the exertion he has been obliged to use during the day: complains of a good deal of pain in the wound, and has some difficulty in swallowing; he is also subject to a cough, which now becomes exceedingly troublesome; pulse feeble, small, and frequent; skin hot and dry. Is directed to take of Tinct. Opii-gtt. lx.

Nov. 15. 9 A. M.—Has rested well during the night, and is comfortable when not disturbed

by the cough; has taken very little nourishment in consequence of the difficulty of swallowing; skin is natural; pulse less frequent, and fuller; tongue does not manifest any febrile disposition.

12 $\frac{1}{2}$ P. M.—The difficulty of swallowing food, and the cough, are the only unpleasant symptoms under which the patient labours. Directed an anodyne draught in the evening. Contrary to direct injunction, the patient left his bed and walked across the floor.

Nov. 16, 12 o'clock.—Patient passed a comfortable night, and is considerably better this morning. State of pulse and skin, favourable; the former rather feeble; has had an evacuation from his bowels spontaneously; is directed to take as much nourishment as the state of his throat will permit; is allowed a bottle of ale.

Nov. 17, 12 o'clock.—The inflammation which rendered deglutition so difficult, has in a great measure abated; he is now able to take a sufficient quantity of nourishment, in consequence of which, his pulse is better, and his whole appearance has improved; he is now allowed in addition to the ale, a little wine. Suppuration had softened the dressings, and they appeared loose, in consequence of which they were removed, and the wound dressed. Its appearance is rather more favourable than was anticipated; but the whole of the disease is by no means removed.

The extent of the wound in length, is six inches, and three in width. There is a small black slough, just where the tumour was first discovered; below that and the chin, there is a cluster of exuberant granulations, somewhat resembling those situated on the edges of the opening of the tumour.

The wound made for taking up the carotid artery, is very florid; there is a slough at the bottom, which is becoming loose; its edges are highly inflamed by the acrimony of the discharge from the wound above, which is constantly running into it.

Nov. 18, 12 o'clock.—The patient is improved, he takes solid food with more facility, and is in every respect more comfortable. The wound was again dressed; its general appearance is somewhat more favourable; the discharge is very acrid, and excoriates the parts about the lower wound. He is directed to take freely of ale and wine.

Nov. 19, 12 o'clock.—Patient is still improving; the wound was again dressed; directed a lotion of 3ij. of Fowler's solution of arsenic, in 3viij. of water, to be applied to the exuberant and spongy granulations.

Nov. 20.—The wound is improved; patient is also comfortable; appetite is good; bowels costive, is directed to take immediately, Rhei.

palmat. ℥j. and Sup. tart. potass. ℥ij. and to continue the other prescriptions as before.

Nov. 21, 12 o'clock.—Discharge is more abundant, and has inflamed the lower wound considerably, and excoriated the parts about it; his general appearance is better; cough still troublesome, more particularly at night; bowels free; no febrile symptoms.

Nov. 22, 12 o'clock.—The upper wound is much contracted, the posterior part of it is granulating and cicatrizing rapidly; the lower is still very much inflamed, and rendered extremely sensible by the discharge of the other; directed to cover the upper wound with flour, and lint, and to take the Spermaceti mixture whenever the cough is urgent.

Patient is improving, and would be very comfortable if not disturbed by the cough, which prevents him from resting well.

Nov. 23, 9 A. M.—Patient has not rested well, cough exceedingly troublesome; pulse still feeble; dressings were again removed; the wound above looks well; the lower is very much irritated by the discharge, its edges are highly inflamed, and bleed upon a slight touch; his appetite is good, and he takes sufficient quantity of nourishment, with wine and porter; is directed to take in addition to the other remedies, Tinct. Cinch. ℥ss. every two hours; the upper wound is gran-

ulating rapidly ; all the old sloughs are removed ; the ligatures have all come away ; the suppuration has the appearance of healthy pus, but is extremely acrid ; has no fætor.

Nov. 24.—Patient is in a fair way to do well. The cough remains by far the most troublesome symptom he has, it frequently prevents him from sleeping, and irritates the wounds by the motion it occasions ; his general appearance is however improving, his appetite is good, and he is subject to no pain. The wound is dressed daily, its appearance is highly flattering, the whole surface now is florid, since the sloughs are removed ; the granulations are, however, spongy in the anterior part, but at the other parts, they are perfectly healthy ; the lower wound is less highly inflamed, and the discharge is considerable, but less acrid.

Nov. 27.—The patient is perhaps a little better than at the last report ; cough is still frequent and renders him restless at night ; it is now attended with a copious expectoration ; deglutition is less difficult, and his appetite is reasonably good ; he has been constantly free from fever, though his pulse is still frequent.

The wounds are dressed daily ; the lower edge of the upper wound is contracting rapidly ; along the upper edge there is a range of exuberant and morbid granulations, projecting a quarter of an

inch above the skin, partaking somewhat of the character of the original fungus.

The ligatures on the carotid came away to day, adhering to the portion of artery included between them, and separating nearly half an inch of artery from the points at which they were applied.

Nov. 30.—Patient continues to do well; his health generally is much better than before the operation; he is not as strong, but is in every respect more comfortable; the cough is an accidental thing, and no way necessarily connected with the consequences of the operation; it gives him more uneasiness at present, than the wounds themselves.

He prefers a sitting posture in bed, and is supported in that posture by a bed-chair. All his symptoms continue favourable, but his improvement is very gradual.

The wounds have not altered much in their appearance; the acrid discharge from the upper, operates very much against the amendment of the lower, and the granulations have somewhat the character of the original tumour, bleeding upon the slightest touch, and are exquisitely sensible.

Dec. 7.—Patient has not been as well as usual; cough prevents him from sleeping, and the motion produced by it irritates the wounds; expectoration is very considerable; he seems to be de-

pressed and anxious. The discharge from the wound is less acrid, and has allowed the lower wound to get into a much better state, it is now completely filled up, the granulations are, however, flabby, and do not appear inclined to cicatrize. The surrounding parts are not so florid and sensible as they have been.

His neck is drawn considerably to one side, and he is unable to move it, he thinks it partly owing to its resting constantly in one position on the bed chair. Is directed to lay in a recumbent posture, and occasionally to leave his bed, and sit in an easy chair; appetite not so good as usual.

Dec. 15.—The patient has recovered a little from his late indisposition, the stiffness of the neck still remains; appetite good; an anodyne procures him rest at night; the upper wound not improved much; the morbid granulations are at least half an inch above the skin, and in some places a little higher; he leaves his bed daily, and passes several hours in an easy chair.

From this time, his health appeared to be gradually on the decline. The lower wound in a little while healed up; the upper underwent but little alteration from this time forward. The cough continued to be very troublesome, the expectoration very copious, and evidently purulent. He became regularly hectic, accompanied with great emaciation, and died on the 3rd of March,

1819, having lived three months and nineteen days after the operation.

It will be perceived from the account of this case, that the cough was aggravated by the operation, but not produced by it. In three instances in which we have seen the carotid tied, a very considerable cough has attended, until suppuration was fully established in the wound, when it has subsided. My patient laboured under a cough before the operation, and there was a manifest increase of it for a week or more after its performance, but it by no means was the cause of its continuance, as the dissection after death will evince. The hectic symptoms arose from the diseased condition of the mucous membrane of the trachea and its bronchial ramifications, rather than the irritation of the ulcer left from the operation. His death may therefore with more propriety, be attributed to the pulmonary, than the fungous disease.

DISSECTION.

The carcinomatous granulations had risen a little above the surrounding surface, the size of the ulcer had considerably contracted since the ope-

ration, the lower jaw was exposed to some extent about the posterior angle, but very little carious.

On opening the thorax, the lungs appeared externally to be in a healthy state, with the exception of several adhesions of one lung to the pleura costalis. Upon dividing the trachea a little above the bronchiæ, it was found nearly filled with pus; the lungs when cut into, exhibited the same appearance at innumerable points, without the least vestige of ulceration at any part. The mucous membrane was rough, and thickened in the trachea, and also in the bronchial ramifications.

The abdominal viscera were sound, except the kidneys. In the tubular part of each was found a small abscess about the size of a nutmeg, apparently containing a healthy looking pus.

As this afforded me an excellent opportunity of examining the arteries on the right side of the head and neck, after the carotid had been tied, and not knowing that any such case had been recorded, I gladly availed myself of it, and separated the head, neck, and shoulders in the following manner.

Having sawed through the sternum at the upper part, so as to leave the clavicles attached, the superior extremities were removed from the trunk, and the dorsal vertebræ and ribs divided between the second and third, so as to leave it of

a bust like shape. This preserved the shoulders in such a way, that the subclavians and their branches might be injected. The ascending arch, and a portion of the descending aorta, were also included in the preparation.

To secure the filling of the arteries of the head and neck, a long pipe was passed up the aorta into the left carotid, and a fine wax injection was thrown in with great care, and as the subsequent account will show, with great success. The aorta was next injected to fill the subclavians and their branches. In the dissection, which was conducted with the greatest care and attention, I was assisted by David L. Rodgers and Alexander Vasché, two of my pupils, ardent in the pursuit of anatomical and surgical knowledge.

The following description of the arteries of the head and neck, is taken from the preparation, and they are delineated as far as possible in the annexed engravings.

1st. *The arteries that supplied the right side of the head and neck, after the carotid had been tied. See plate II.*

To give a regular description of these arteries, would be incompatible with the principle of collateral circulation; in as much as they are found to vary in different subjects, for "the inosculation

is never carried on by any particular set of vessels, but by all the arteries of the neighbouring parts."

Upon removing the integuments on the forepart of the neck, and laying bare the carotid artery, from the innominata to the angle of the jaw, its caliber was found completely obliterated from its origin to its bifurcation; leaving a firm, lagamentous cord, which was divided into two parts, showing the place where the ligatures had been applied.

The vein and nerve were perfectly natural. The right subclavian was much enlarged, being equal in size to the innominata, from its origin to the scalmi muscles.

The left carotid was enlarged to twice its natural diameter, its branches increased in the same ratio, and assumed a tortuous and irregular course.

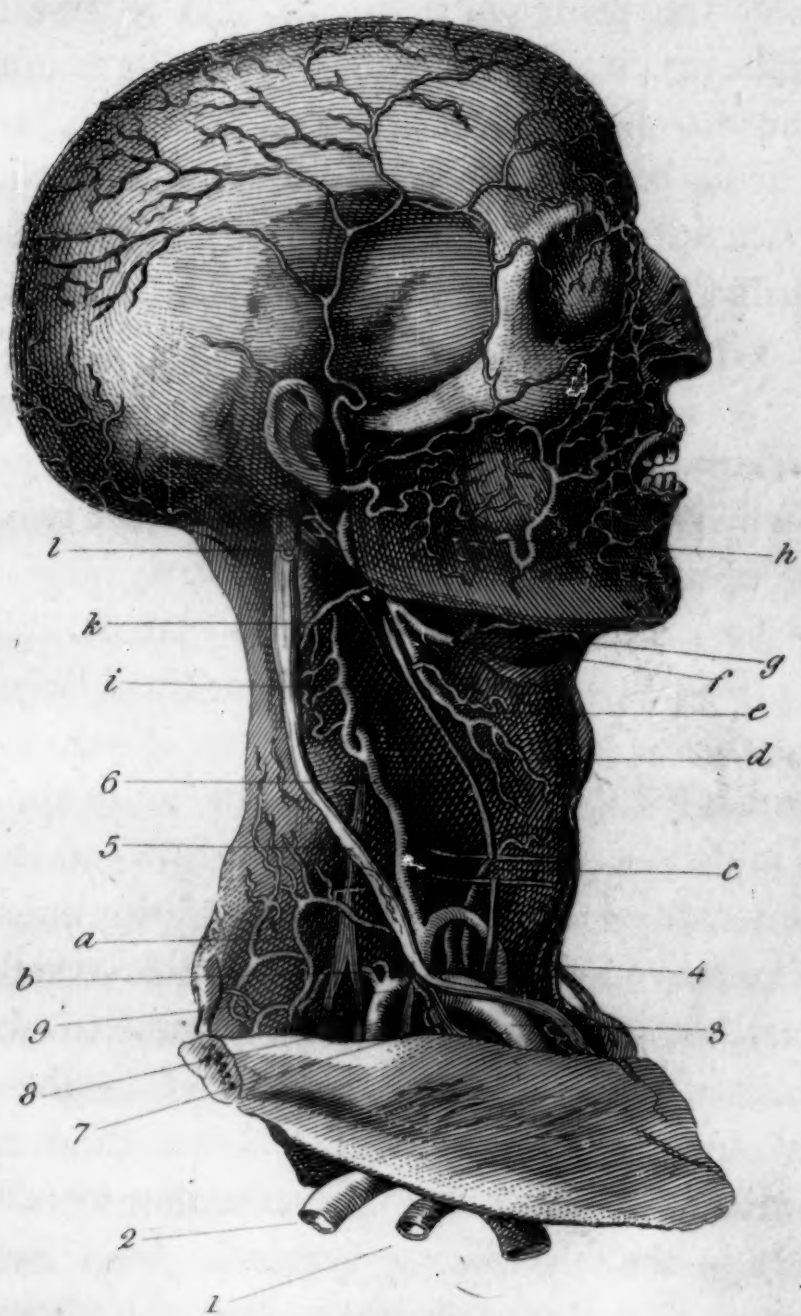
When we take into consideration the connexion which the arteries of the left, have with those of the right side of the head, and their free inosulation with the subclavian, we can have in our imagination, the branches that must necessarily supply the place of the right carotid. First, we have the branches arising from the subclavian, which are very numerous; secondly, those arising from the left carotid, which are still more numerous.

A minute detail of the numerous vessels which communicate with the carotid, would be tedious

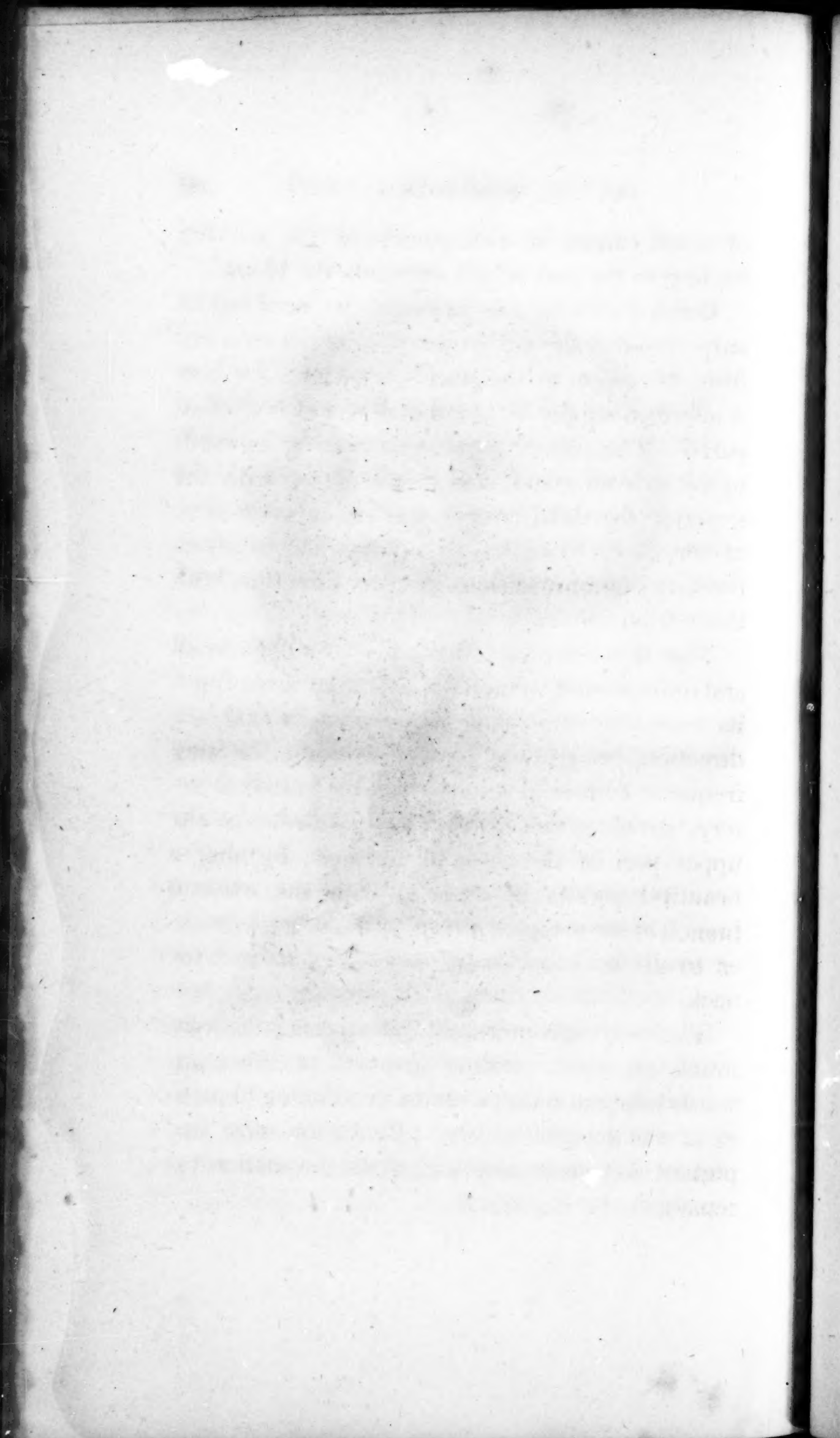
and uninteresting, and would perhaps be impracticable, were it deemed expedient. Suffice it to notice the principal branches, and to give a general description of the smaller, but not less beautiful inosculations. We find then, arising from the right subclavian; first, the *arteria thyroidea inferior*; secondly, the *cervicalis profunda*; thirdly, the *cervicalis superficialis*; and fourthly, the vertebral arteries.

The inferior thyroid, as it arises from the subclavian, divides into four branches; two passing downwards and outwards, and the other two passing upwards; the latter are called the *ramus thyroidea*, and the *thyroidea ascendens*. These require particular attention from their large size, and the important supply of blood which they furnish for the support of the arteries of the neck. While the superior arteries were enlarged to twice their natural diameter, the two inferior ones, viz. the *transversalis colli*, and the *transversalis humeri*, although arising from the same trunk, and receiving their currents of blood in the most favourable direction, still retained their natural dimensions. But this phenomenon usually occurs in the circulating system. John Bell observes, "that in whatever way the demand of blood upon an artery or set of arteries is increased, the effect is an accelerated motion of blood towards that artery." And again, "any demand

Pl. II.



A. Anderson Sc.



of blood causes an enlargement of the arteries, leading to the part which demands the blood."

Guided then by this principle, we need not be surprized that the subclavian is so much enlarged from its origin to the scaleni muscles; for here it affords a supply of blood to new and important parts. The ramus thyroideus passing upwards to the thyroid gland, and anastomosing with the superior thyroidal artery, was one great source of blood, its branches were large and tortuous, forming communications in every direction, with those from above.

The thyroidea ascendens, is naturally a small and unimportant branch; it was here three times its usual size, mounting up the neck in a zig-zag direction, lying close to the vertebræ, forming frequent communications with the vertebral artery, dividing into many small branches at the upper part of the mastoid muscles, forming a beautiful plexus of vessels, with the mastoid branch of the occipital artery, and sending branches to all the muscles on the upper part of the neck.

The cervicalis profunda and superficialis, were much enlarged, sending frequent branches upwards to anastomose, with the descending branches of the occipital artery. By far the most important and interesting part of the circulation yet remains to be described.

2dly. *The arteries of the left side of the head and neck.*
See plate III.

The left carotid passing up the neck equal in size to the innominata, furnished the greatest part of the blood for the right side.

In order to determine what particular arteries were enlarged, it is necessary only to enumerate the branches given off from the carotid, and more particularly those which arise from its forepart. Below the jaw there are four; *to wit*, the superior thyroid, the lingual, pharyngeal, and the maxillaris interna, which inosculate with open mouths, having the appearance of continuous trunks, and sending a plentiful supply of blood to the neck, and internal parts of the face.

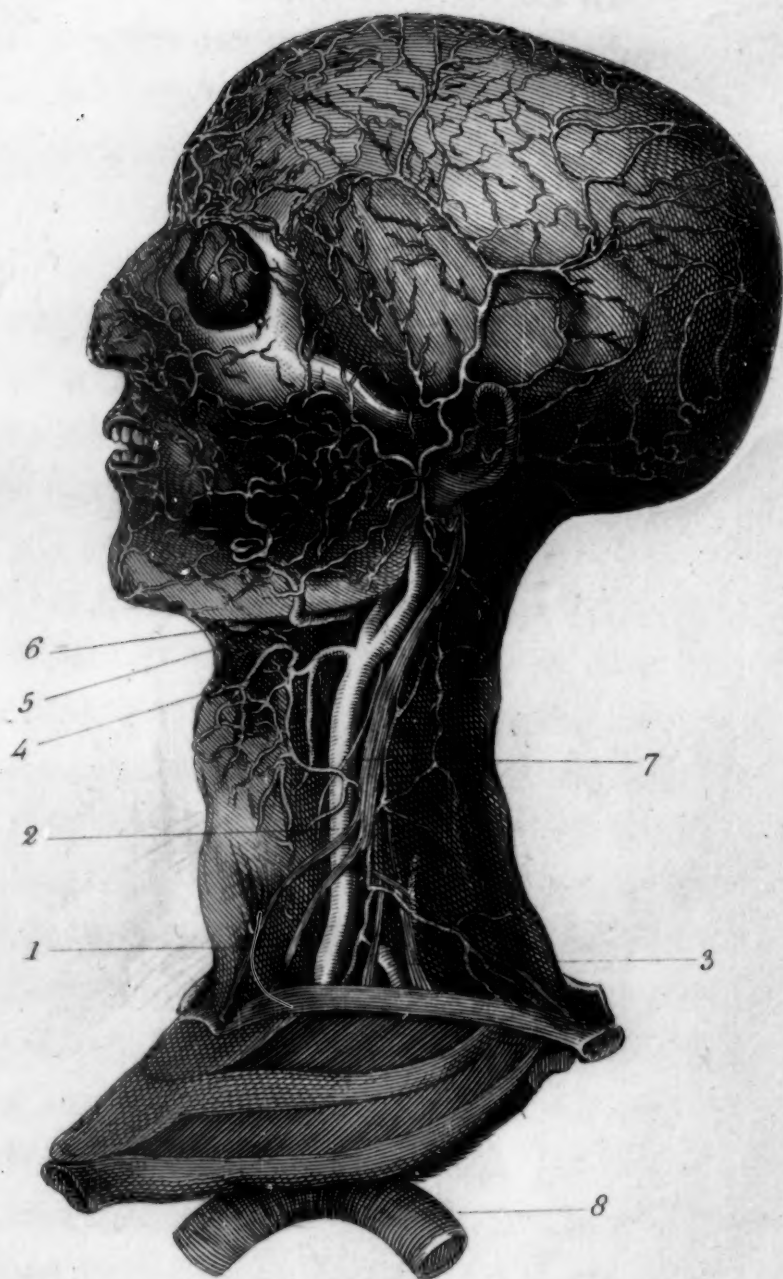
The labial and temporal arteries leaving the axilla under the angle of the jaw, passing upwards upon the face, send off small branches in a beautiful and fantastic manner. Branches, which before were considered unworthy the attention of the anatomist, now rise into importance. The plexuses and inosculation formed by these branches, excite alike our surprise and admiration, and elucidate, in the most beautiful manner, the principles of collateral circulation. These arte-

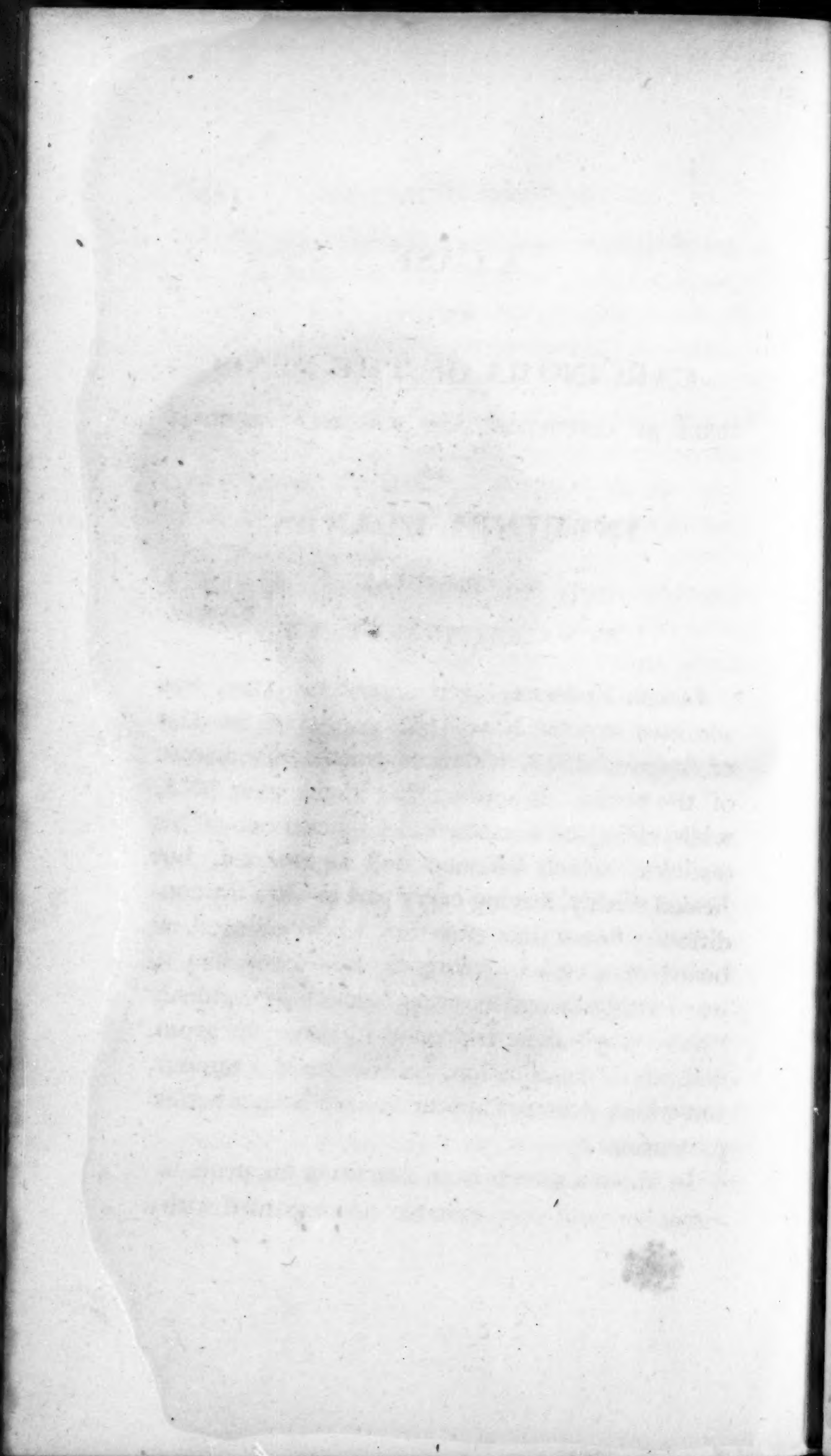
ries, in general, are large and tortuous, and have frequent communications among themselves. The arteries most enlarged, were the mental, the inferior labial, the coronary, and the angularis. The optic artery was likewise much enlarged, beautifully anastomosing with the angularis.

So freely did these arteries inosculate with those of the right side, that before the operation was finished, it was found necessary to secure the labial artery in a ligature. This was clearly illustrated by the retrograde course of the injection, after death, which passed freely from the arteries of the opposite side, filling the superior portion of the labial, to the point at which the ligature had been applied. The temporal artery was of its natural size, receiving its blood from "all the arteries of the neighbouring parts," from the ascending branches of the occipital, the left temporal, the opthalmic, and the transverse facial. This free communication was distinctly shown by the injection, which passing down the temporal, completely filled the external and internal carotids, and several of their branches; particularly the inferior portion of the labial, which is seen emerging from under the jaw, to pass upon the face. The labial terminated at that point where the mental is given off. The mental itself, passed on to its usual

destination, and received blood from its fellow of the opposite side.

All of these arteries will be easily seen, and readily recognised, by referring to the plates.





A CASE
OF
CARCINOMA OF THE PENIS
CURED BY AMPUTATION; AND SUBSEQUENT REMOVAL
OF THE
INGUINAL GLANDS,
SUCCESSFULLY.

BY VALENTINE MOTT, M.D.

JAMES PORTER, aged sixty-four years, was admitted into the New-York hospital on the 31st of August, 1819, with a carcinomatous disease of the penis. It appears that in the year 1805, while riding on horseback, he injured one of his testicles, which inflamed and suppurated, but healed readily, leaving every part in a healthy condition. Some time after this, while engaged on board of a vessel, where he was compelled to use extraordinary exertion, something suddenly "gave way" as he expressed it, about the groin, and upon examination, he discovered a tumour, but which does not appear to have been a hernial protrusion.

In about a month from this time, his penis became sore and very irritable, accompanied with a

scalding and discharge of matter. From his active and laborious employment, and the great irritability of the parts, he was in the habit of drawing down the prepuce to protect the glans from the friction of his dress. This ulcer, as he terms it, though probably an excoriation about the corona glandis, eventually healed, leaving the prepuce lengthened and contracted, at the extremity, so as to cover completely the glans, in the form of a phymosis.

He continued his business without experiencing much inconvenience from the phymosis until November 1818. At this time the glans penis enlarged, grew hard, and ulcerated, but he experienced very little pain. The prepuce had now contracted so closely, as very much to interrupt the flow of urine.

The ulceration commenced on the dorsum of the penis, about an inch and a half from the extremity. This was soon followed by others leading to the glans, and into the corpora cavernosa, having an irregular appearance, ragged and everted edges, and discharging a thin, acrid, and very foetid matter. The penis, for half its length, had now increased in size, became knotty, hard, and irregular, with acute and lancinating pains darting through it. These were aggravated by changes in the weather from dry to moist, as well as vicissitudes from heat to cold.

On the 28th of September, 1819, the penis was amputated, with a catlin, previously drawing up the integuments a little ; leaving a stump of about an inch in length. An artery was secured in each of the bodies of the penis, and one in the integuments upon the dorsum. The integuments were drawn over the end, previously applying a little lint, which with slight compression, readily checked the oosing of blood.

The inguinal glands on both sides, were considerably swelled and hardened, before the operation, but gradually diminished afterward, and returned to a natural state. From the appearance of the disease, as well as the character of the man, no suspicion could be indulged of its venereal origin.

After the healing of the stump commenced, a piece of bougie was worn several hours in the day, which preserved the orifice of the urethra sufficiently open for all the necessary purposes.

He was discharged cured, on the 11th of October 1819, with a particular injunction, however, to return immediately, if the glands in the groins should again enlarge. But going into the country at this time, one gland in the right groin was allowed to swell, inflame, and ulcerate, before he applied for assistance. He was re-admitted on the 3rd of March, following. The gland was large, occupying nearly the whole course of the crural

arch, spreading upon the abdomen, and downwards upon the thigh, having a large opening in it, of a sloughy look internally, with everted edges formed of unhealthy and bleeding granulations.

The right tumour was extirpated without delay, with a removal of the surrounding integuments to some extent, so as to avoid every part that was inflamed in the incision. This wound granulated, and healed kindly. When nearly well, the gland in the left groin appeared evidently to enlarge more rapidly; it was removed fourteen days after the first, when about the size of a hen's egg, and before the skin had become inflamed. He was again discharged cured on the 29th of May, and has since been attached to the hospital, as gate-keeper, and at present, September 14th, his health is in every respect perfectly good.

EXPLANATION OF PLATES.

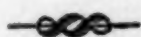


PLATE I.

This plate will convey a very good idea of the tumour. The shaded part is intended to represent the disease far beyond the ulcerated, or fungous projections. It was wished to avoid all the morbid hardness in the incision, and as the dotted lines will show, this was very nearly accomplished. The cutaneous veins anterior to the ear, are seen much enlarged, and the arteries and veins on other parts of the tumour, and around it were in a very distended state.

PLATE II.

In this plate is represented the right carotid artery, obliterated from the innominata to the bifurcation. The success with which the circulation was carried on to the head through the inosculating channels, may also be seen in the enlarged anastomosing branches.

Fig. 1. Right bronchial tube.

2. Aorta.

3. Arteria Innominata.

4. Ramus thyroideus arteriæ thyroidææ.

5. Sterno-cleido mastoideus.

6. Thyroidea ascendens.

7. Scalenus anticus muscle.

8. Subclavian artery, after it has passed the scaleni muscles.

9. Transversalis humeri of its natural size.

a Transversalis colli.

b Cervicalis superficialis et profunda.

c Portion of the carotid separated by the ligatures.

d Obliterated carotid.

e Superior thyroidal artery.

f Inferior portion of the labial, as divided in the operation.

g Mental artery.

- h* Superior portion of the labial, where tied in the operation.
- i* Plexus of arteries formed by inosculations of the ascending thyroid, and a descending branch of the occipital.
- k* Descending branch of the occipital.
- l* External carotid filled with injection.

PLATE III.

This plate will give some idea of the success which attended the injection of the left side of the head and neck. Most of the more considerable vessels are here delineated, but the beauty of the preparation far surpasses the plate, in the minuteness with which the vessels are filled. All of these are preternaturally enlarged. Only a few of the arteries which are most enlarged, will be referred to in the explanation of this plate. There is no variety in the course or distribution of the arteries.

Fig. 1. The two portions of the sterno-cleido mastoideus muscle.

- 2. Left carotid artery as large as the innominata.
- 3. Left subclavian artery, external to the scaleni muscles.
- 4. Superior thyroid artery.
- 5. Labial artery much enlarged.
- 6. Mental artery twice its common size.
- 7. Par vagum raised up, and seen crossing the carotid artery.
- 8. Arch of the aorta.

